



# **Army Modularity and the Future Engineer Force**

**Overview for:  
USMC Engineer Master  
Planning Conference  
22 February 2005**



# The Strategic Context

- We are a nation at war
- This is a prolonged period of conflict for the US with great uncertainty about the nature and location of that conflict
- We must be able to defuse crises and/or defeat aggression early to prevent escalation, limit damage
- Thus, we need flexible, rapidly deployable forces and sufficient depth and strength to sustain multiple, simultaneous operations



***We have over 350,000  
SOLDIERS overseas in 120  
countries***

***Combatant Commanders need versatile, potent land  
power***



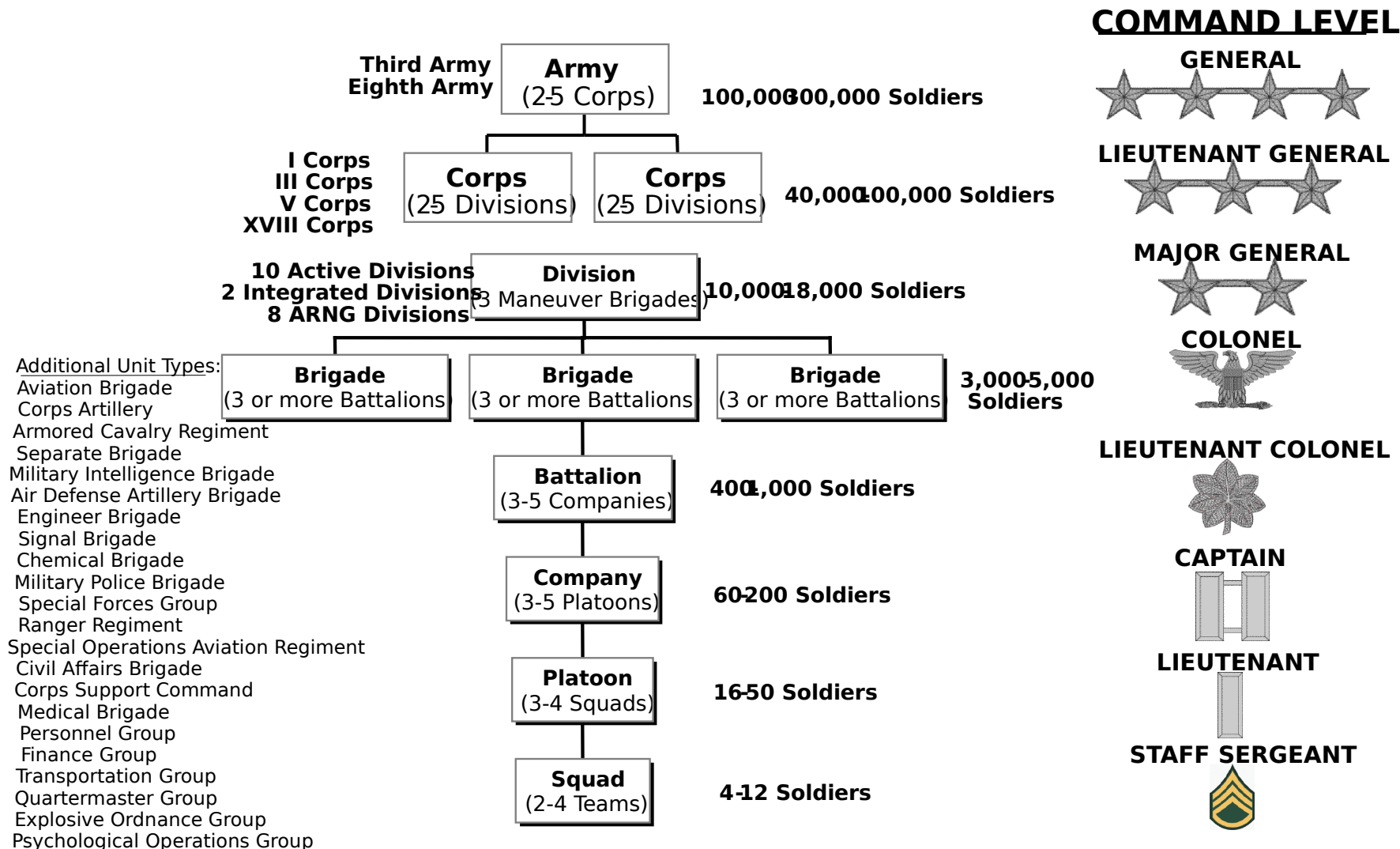


# Challenges for the Current Force

- War is the norm, peace is the exception
- Our adversaries seek adaptive advantage through asymmetry
- We have near peer competitors in niche areas
- Conventional Force on Force conflicts are still possible
- There is an enormous pool of potential combatants armed with irreconcilable ideas
- Our homeland is part of the battlespace
- We are adapting to these challenges NOW




# The Army Today



# What the Current Force Looks Like

**The Army Division** = traditional building block

But...  = ~15,000 Soldiers & Equipment

- Optimized for major land campaigns against similarly organized forces (typically over 20,000 when deployed)
- Large, fixed organizations with interconnected parts
- Requires extensive reorganization to create force packages
- Limits Regional Combatant Commander's ability to mix and match packaged capabilities for m

*We're good, but we can be better...*

- Limited Joint capabilities



# Projecting the Army Worldwide



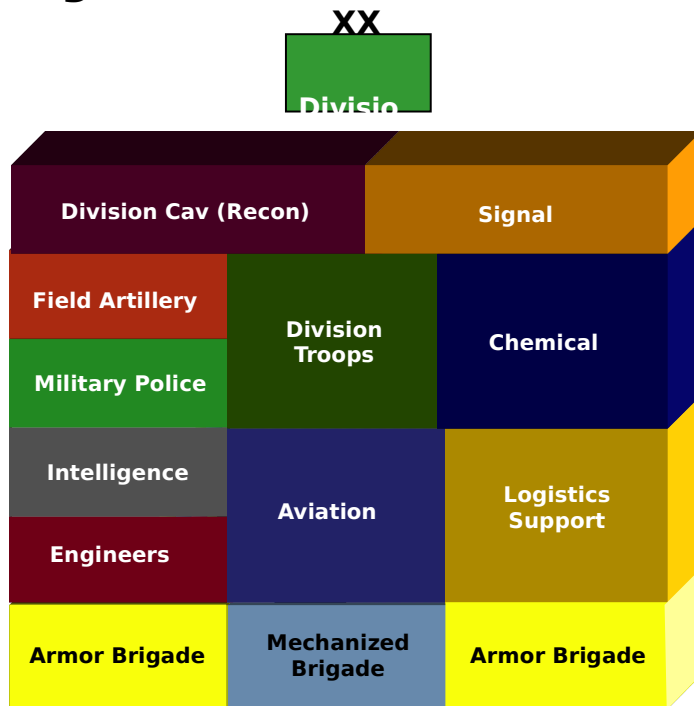
- Units not tied to division base.
- Simultaneous deployment from multiple power projection platforms.

• Basing supports a campaign quality Army with joint and expeditionary capabilities.

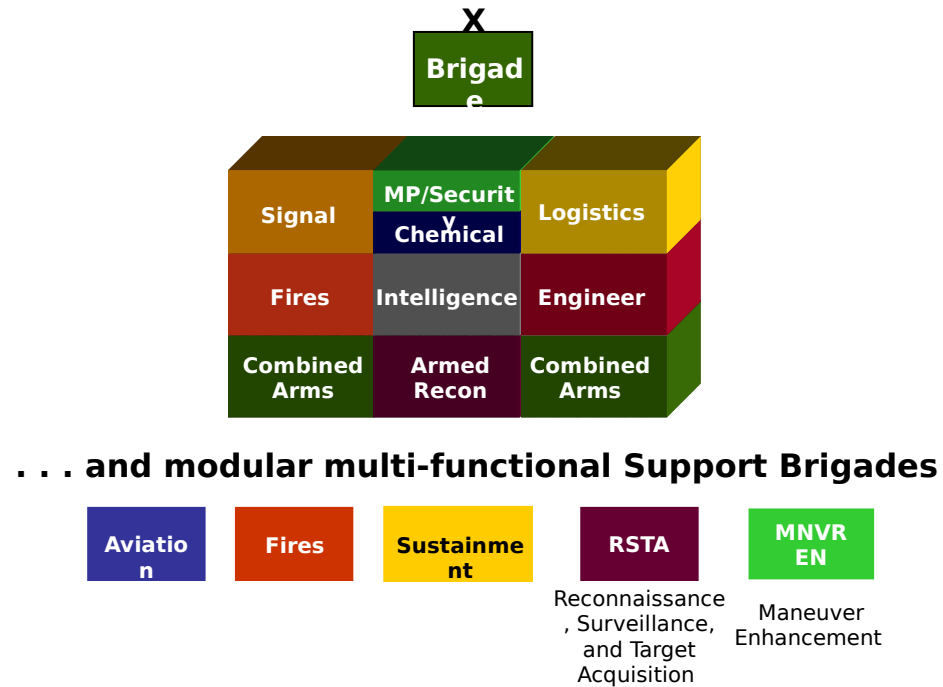
• Power projection platforms provide full range of support for responsive deployment, employment and sustainment of forces.

# From Division to Brigade - Centric

**FROM: An Army based around large, powerful, fixed organizations**



**TO: An Army designed around smaller, more self-contained organizations**



***A More Ready and Relevant Force***



# With Brigades as Building Blocks

(Less than 4,000 Soldiers in each Brigade)



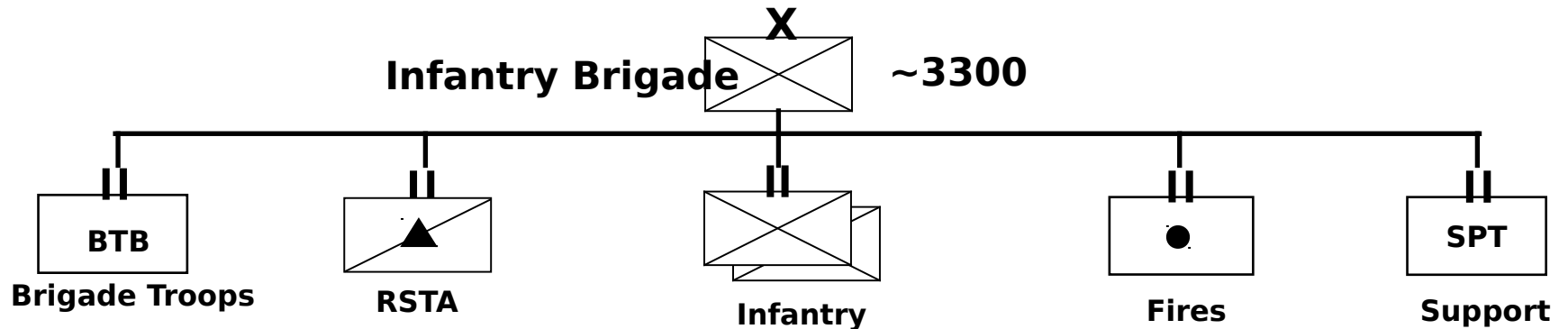
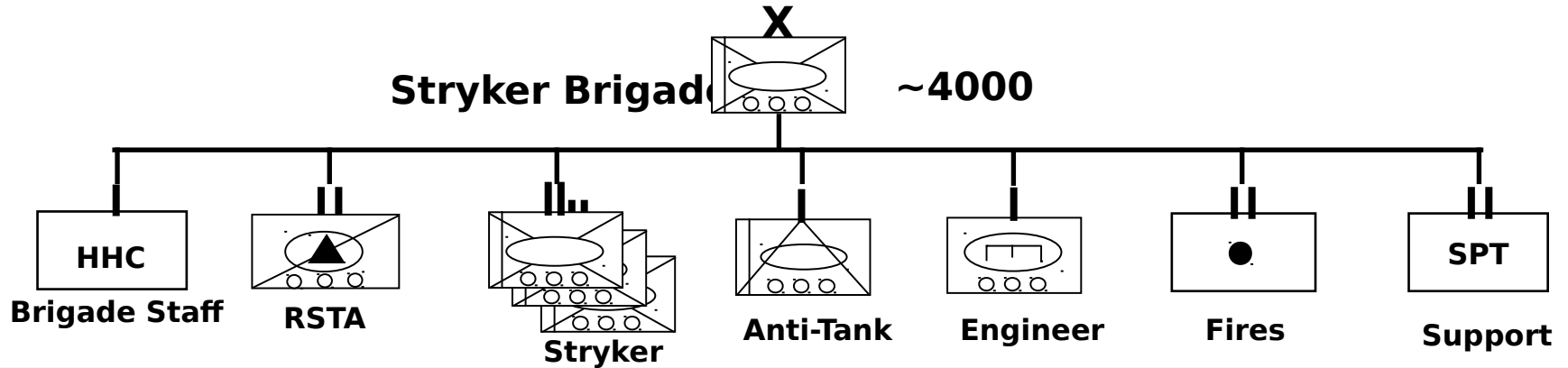
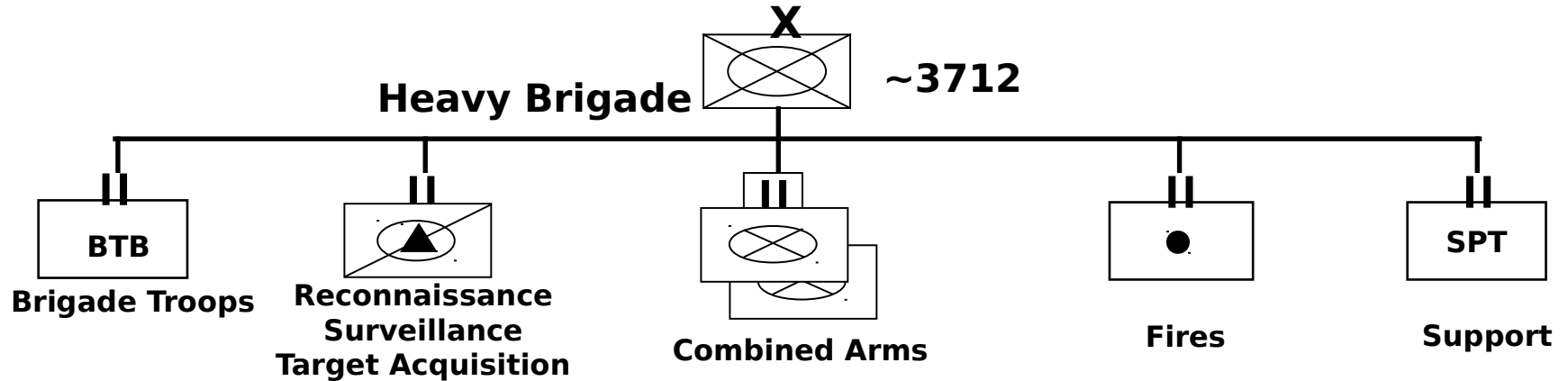
Standard maneuver brigades with organic combined arms capabilities



Supporting brigades with standard headquarters, but variable subordinate units



# Brigade Combat Teams



# Employing the Army in the Joint F

**Units Available**

+

**Headquarter(s) &  
Command Posts**

**A Commander**



**Heavy**



**Infantry**



**RSTA**



**Fires**



**Aviation**



**Sustainment**



**Maneuver  
Enhancement**



**Spec Op Forces**



**Multi-national**



**Joint/Other  
Assets**

**UEy**

**UEx**

4★/3★/2★/1★/🦅

**Tailored Land Forces  
for Regional  
Combatant  
Commanders**

# Levels of Command

## • Joint - Campaign Level

- Integrates the military instrument with other instruments of national power.
- Integrates all elements of the joint force.

**Current**

JFC

XXXX

ASCC

**Transformed**

UE<sub>y</sub>

Theater-wide  
Support  
JFLCC for MCO

## • Operational - Major Land Operations

- Plan and execute major land operations.
- Orchestrates Joint, Interagency & MN operations.
- Execute Administrative Control (ADCON) and Army Support to Other Services (ASOS).

JFLCC

XXX

CORPS

UE<sub>x</sub>

Warfighting

## • Tactical - Battles

- Puts together complementary and reinforcing capabilities with engagements to achieve military conditions within a specified Area of Operations (AO).

XX

DIV

X

BDE

All types of maneuver  
and non-maneuver UAs

MAN

BFSB

FIRES

AVN

SUST

ME

## • Tactical - Engagements

- Close Combat.
- Generates specific effects / outcomes within the AO.





# The Army Campaign Plan



	FY04	FY05	FY06	DP	FY07	FY08	FY09	FY10
AC UEx								
AC BCTs								
ARNG UEx								
ARNG BCTs								
RESERVE		<b>USAR Restructure</b> 1st AREP → 2d and 3d AREPs → 4th and 5th Army Reserve Expeditionary Package (AREP)						
STRYKER	SBCT2	SBCT3	SBCT4		SBCT5	SBCT6		

Applying Lessons Learned from Stryker and OIF

USAR Restructure

1st AREP

2d and 3d AREPs

4th and 5th Army Reserve Expeditionary Package (AREP)

Regional Readiness Commands Redesign

DP Decision point for an additional 5 AC Modular Brigade Combat Teams

Army Maneuver Brigades 2003			
	AC	ARNG	Total
Airborne	4	0	4
Infantry	10	15	25
Stryker	2	0	2
Heavy	17	23	40
<b>Total</b>	<b>33</b>	<b>38*</b>	<b>71</b>



Army Maneuver Brigades 2010			
	AC	ARNG	Total
Airborne	6	0	6
Infantry	12-17	23	35-40
Stryker	5	1	6
Heavy	20	10	30
<b>Total</b>	<b>43-48</b>	<b>34</b>	<b>77-82</b>

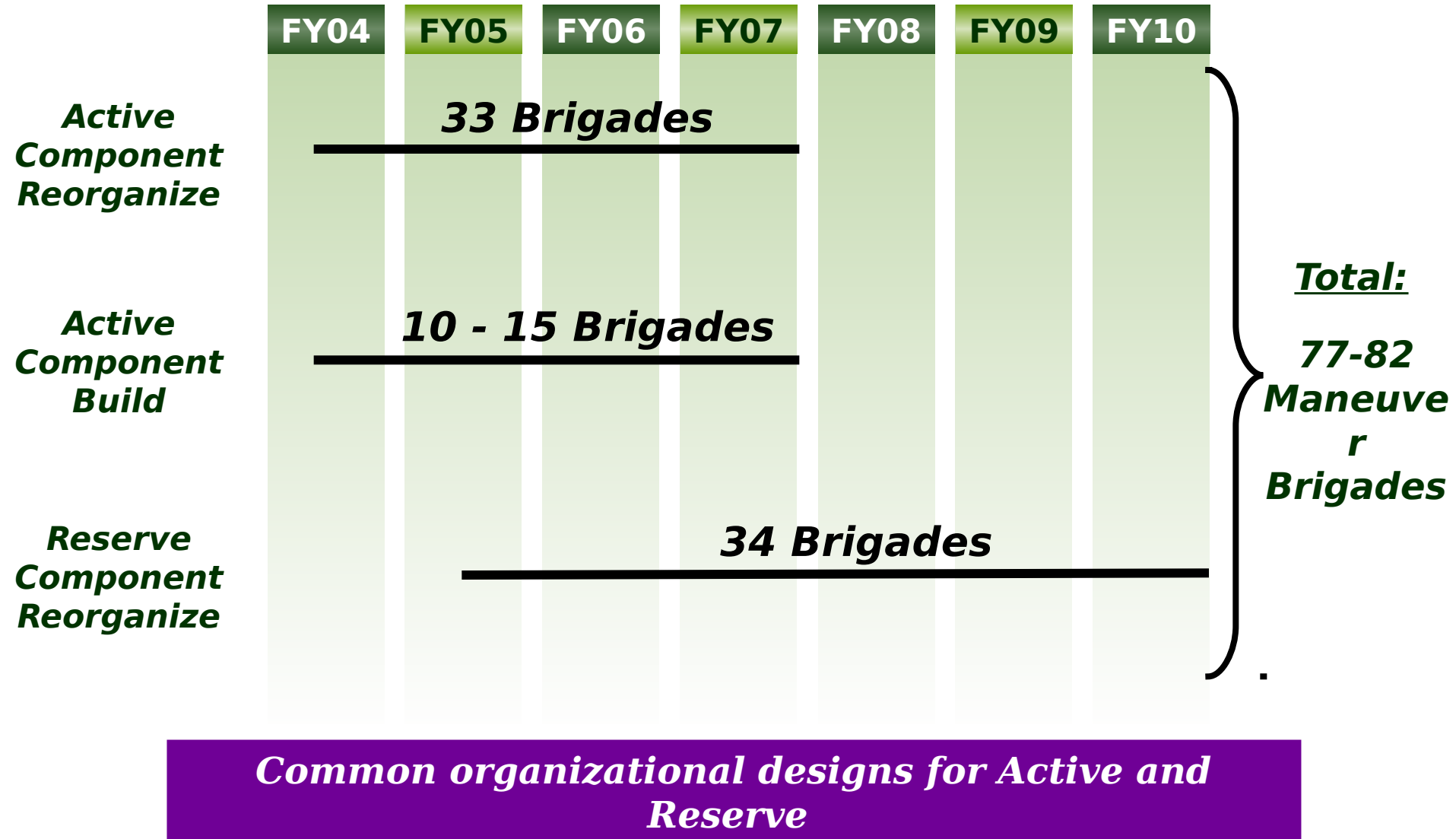
- Increased Joint Combat Capability
- Globally Managed Deployments
- Improved Versatility

- Modular AC/RC Design
- Increased Readiness
- Increases Stability





# **We are Converting the Army Now**





# Ready Forces: AC/ARNG/USAR

“Our Army at War—Relevant and Ready”

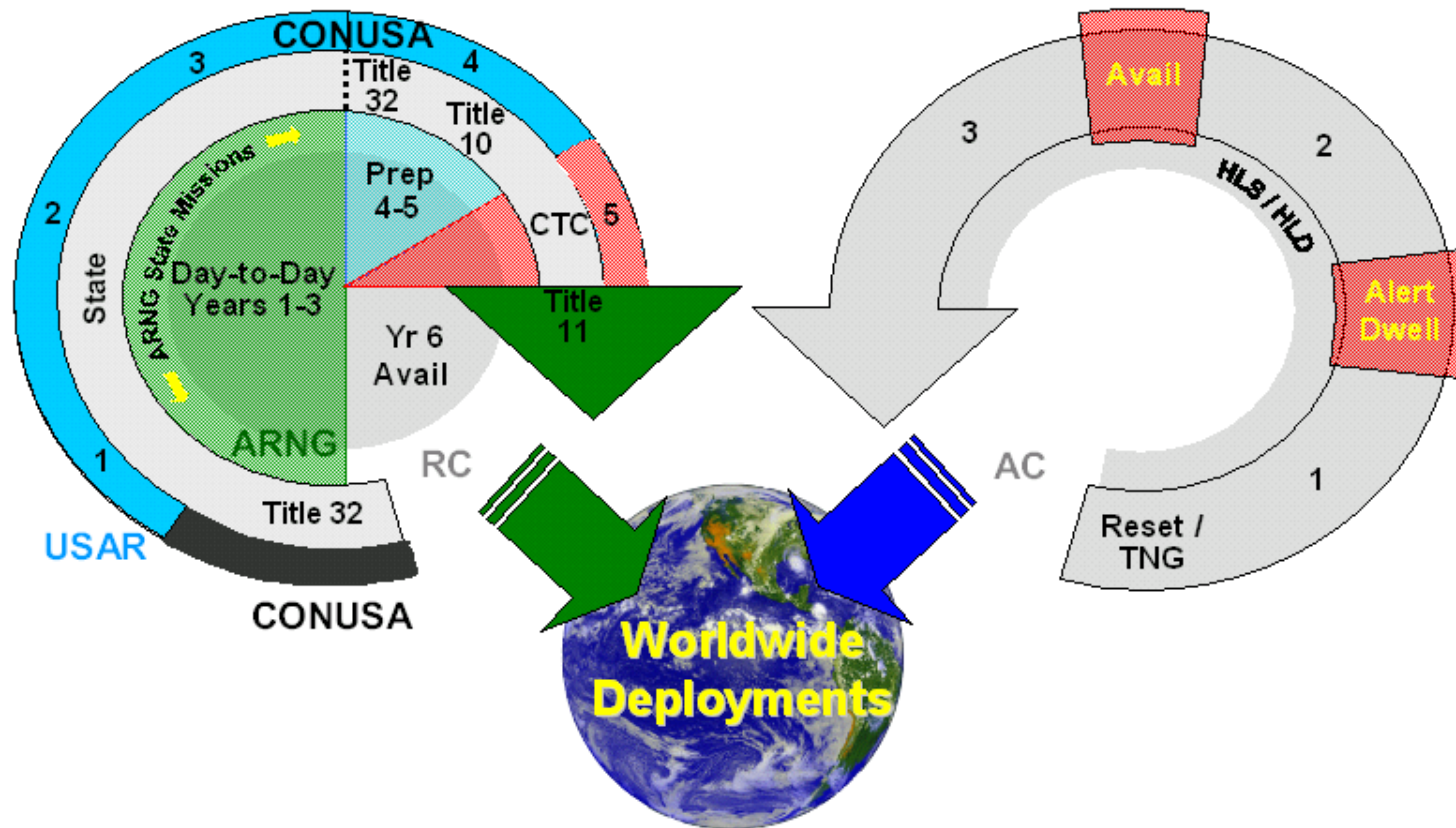
## Reserve Component (ARNG & RC)

BCT(UAs) 6 year cycle (1 year in 6)

AREP 6 year cycle (1 year in 6)

## Active Component

3 year cycle (1 year in 3)



- Manage readiness and availability of forces.
- Maneuver resources based on rotation sequences. Rotate idle equipment to needed locations to maximize employment and readiness.





# What Isn't Changing

## *The Soldier is the Centerpiece of All Our Units*

- ✓ Everything we do is designed to support the Soldier
- ✓ A heritage of fighting and winning our Nation's Wars
- ✓ Traditions reflected in our unit's lineage and honors



# **Soldier's Creed**

**I am an American Soldier.**

**I am a Warrior and a member of a team. I serve the people of the United States and live the Army Values.**

***I will always place the mission first.***

***I will never accept defeat.***

**WARRIOR ETHOS**

***I will never quit.***

***I will never leave a fallen comrade.***

**I am disciplined, physically and mentally tough, trained and proficient in my warrior tasks and drills. I always maintain my arms, my equipment and myself.**

**I am an expert and I am a professional.**

**I stand ready to deploy, engage, and destroy the enemies of the United States of America in close combat.**

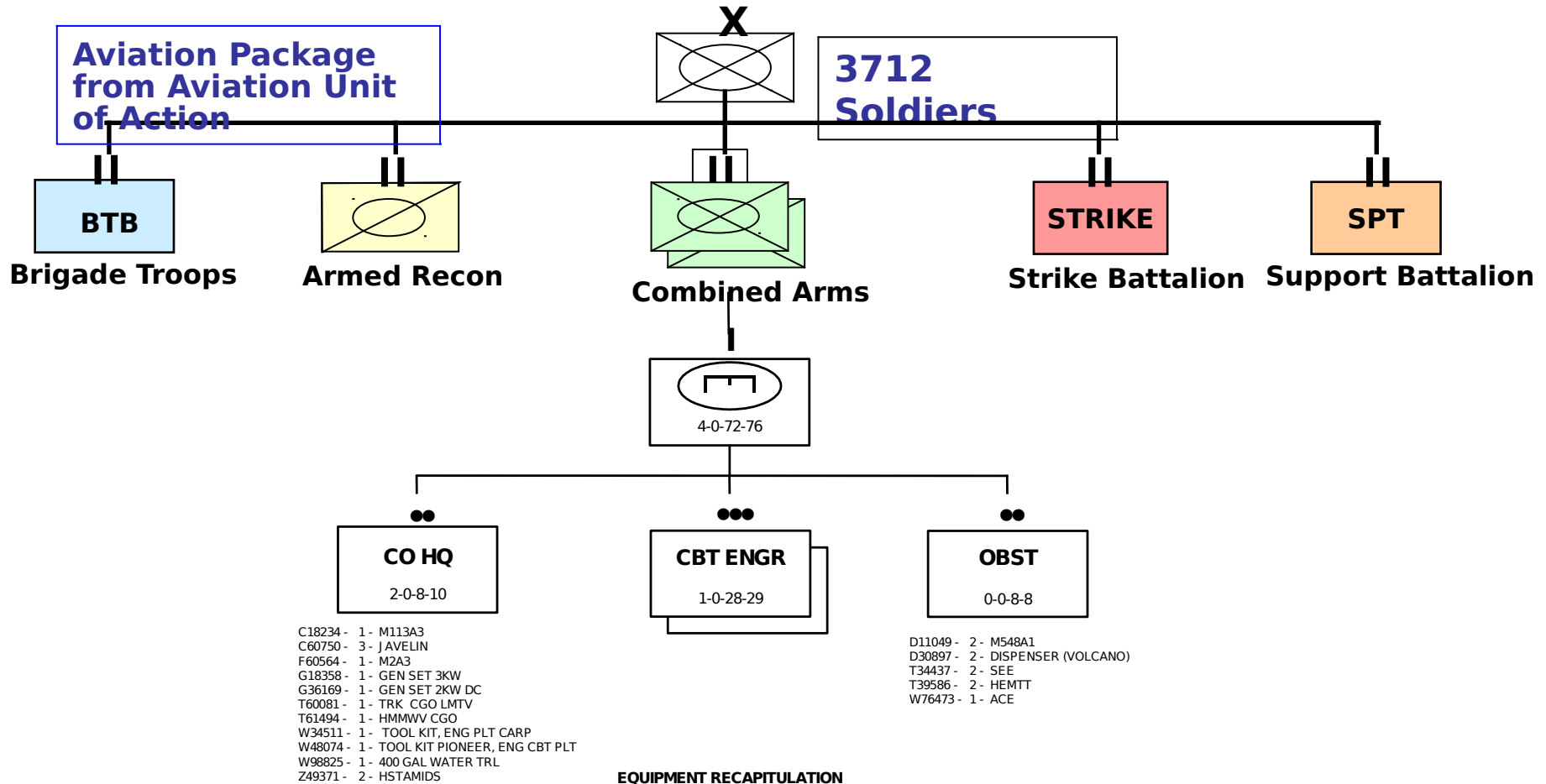
**I am a guardian of freedom and the American way of life.**

**I am an American Soldier.**



# Modular Force Designs

# Heavy Brigade Combat Team

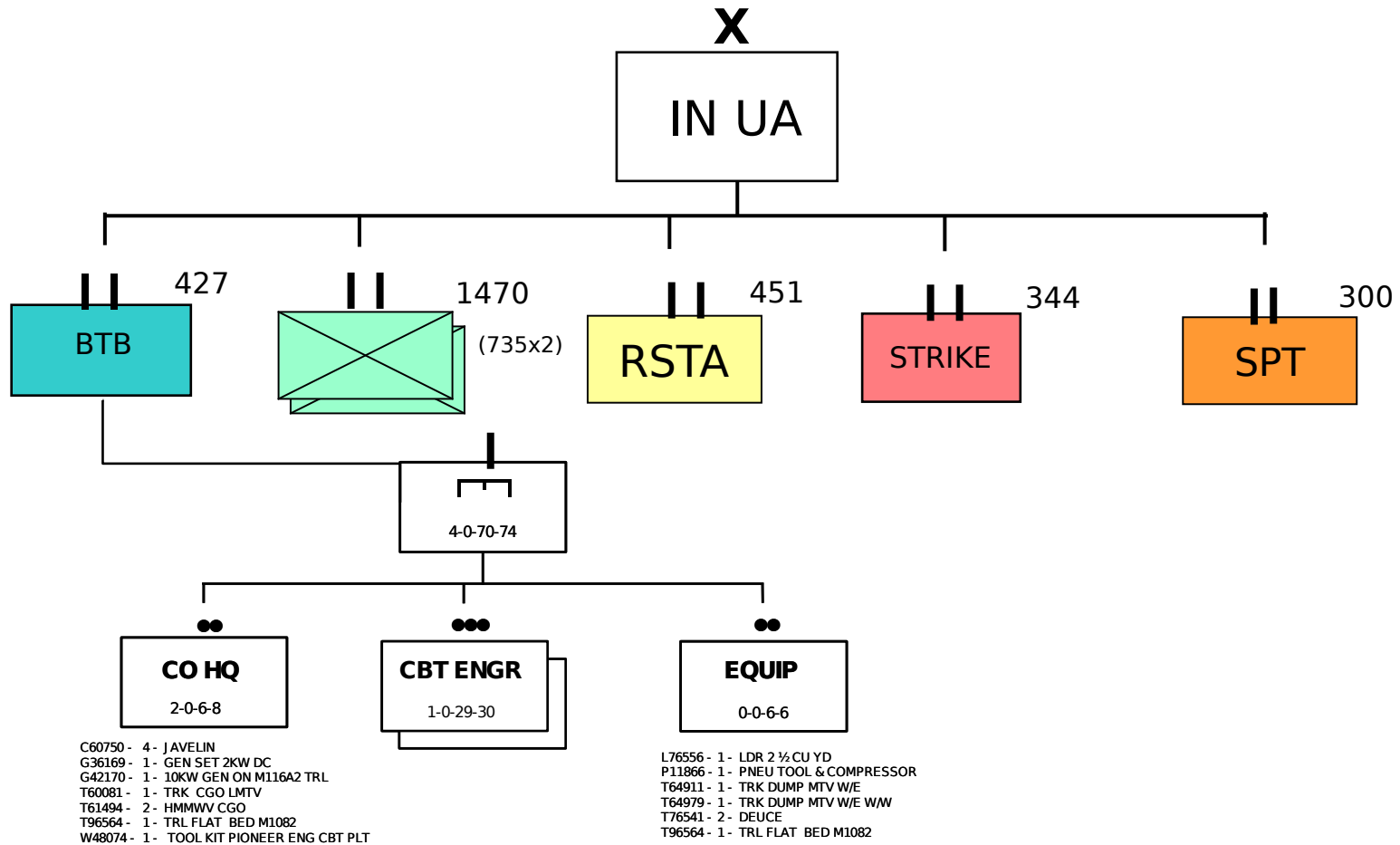


C18234 - 1 - M113A3  
C60750 - 3 - JAVELIN  
D11049 - 2 - M548A1  
D30897 - 2 - DISPENSER (VOLCANO)  
T63238 - 2 - SKETCH SET SURVEYING  
F60564 - 9 - M2A3\* (**BASE IS M113A3**)  
F91490 - 6 - DEMO SET EXPLOSIVE  
G18358 - 1 - 3KW GEN  
G36169 - 1 - 2KW DC GEN  
S93791 - 2 - SOF DEMO KIT  
T34437 - 2 - SEE

T39586 - 2 - HEMTT  
T60081 - 1 - TRK CGO  
T61494 - 3 - HMMWV  
W34511 - 1 - TOOL KIT, ENG PLT CARP  
W34648 - 6 - TOOL KIT, ENG SQ W/CHEST  
W48074 - 1 - TOOL KIT PIONEER, ENG CBT PLT  
W48348 - 6 - TOOL KIT PIONEER, ENG SQ  
W76473 - 3 - ACE\* (**BASE IS DOZER**)  
W95811 - 6 - TRL CGO 1½T  
W98825 - 1 - 400 GAL WATER TRL  
Z49371 - 18 - HSTAMIDS (**BASE IS PSS-11/12**)

\* - BASE STRUCTURE ADDS THREE PEOPLE - (2<sup>ND</sup> OPERATOR FOR DOZER/DRIVER FOR TRACTOR/TRAILER)

# Infantry Brigade Combat Team



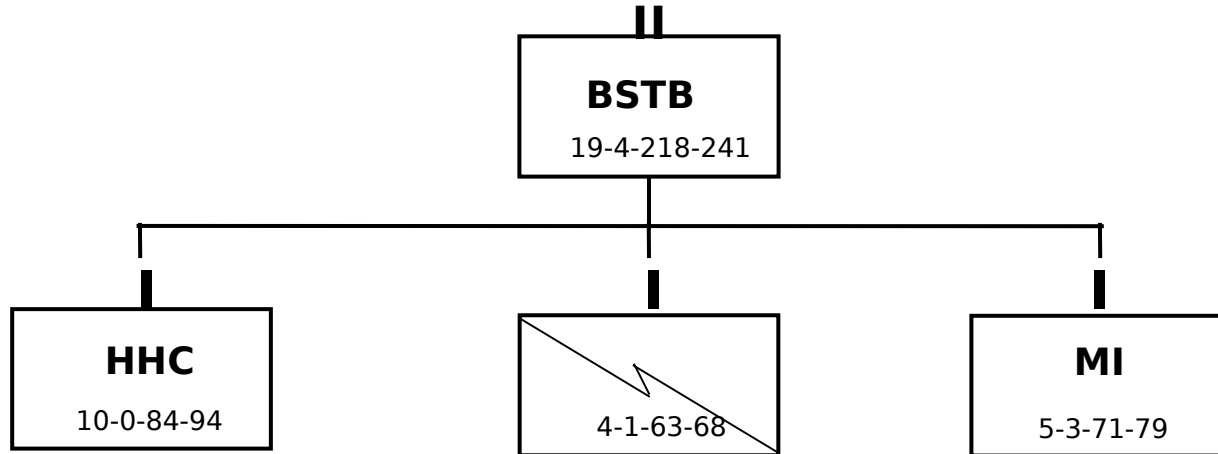
## EQUIPMENT RECAPITULATION

C60750 - 4 - JAVELIN  
 D03932 - 12 - HSTAMIDS  
 F91490 - 6 - DEMO SET EXPLOSIVE  
 G36169 - 1 - GEN SET 2KW DC  
 G42170 - 1 - 10KW GEN ON M116A2 TRL  
 L76556 - 1 - LDR 2 ½ CU YD  
 P11866 - 1 - PNEU TOOL & COMPRESSOR  
 S93791 - 2 - SOF DEMO KIT  
 T34437 - 4 - SEE  
 T60081 - 1 - TRK CGO LMTV  
 T61494 - 4 - HMMWV CGO

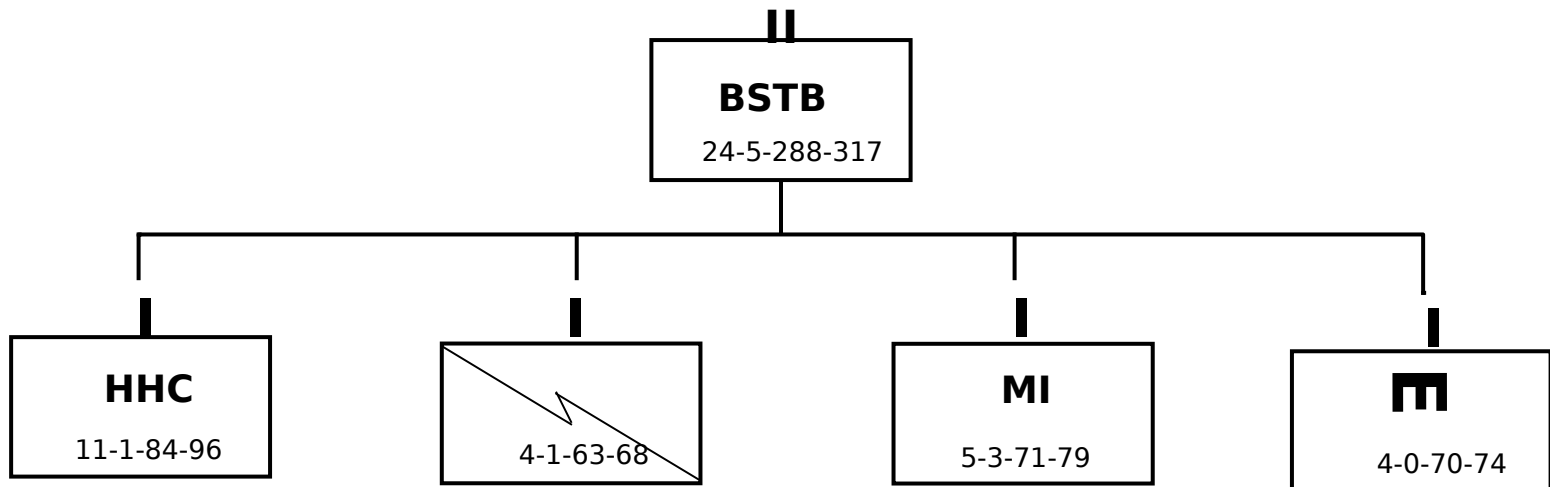
T61562 - 8 - HMMWV CGO W/W  
 T63238 - 2 - SKETCH SET SURVEYING  
 T64911 - 1 - TRK DUMP MTV W/E  
 T64979 - 1 - TRK DUMP MTV W/E W/W  
 T76541 - 2 - DEUCE  
 T95992 - 8 - TRL CGO HI MOB ¾ T  
 T96564 - 1 - TRL FLT BED M1082 LMTV  
 W34511 - 2 - TOOL KIT CARP ENG PLT  
 W34648 - 6 - TOOL KIT CARP ENG SQ  
 W48074 - 1 - TOOL KIT PIONEER ENG CBT PLT  
 W48348 - 6 - TOOL KIT PIONEER ENG SQ

# BRIGADE SPECIAL TROOPS BATTALION

## BSTB Heavy BCT



## BSTB Infantry BCT



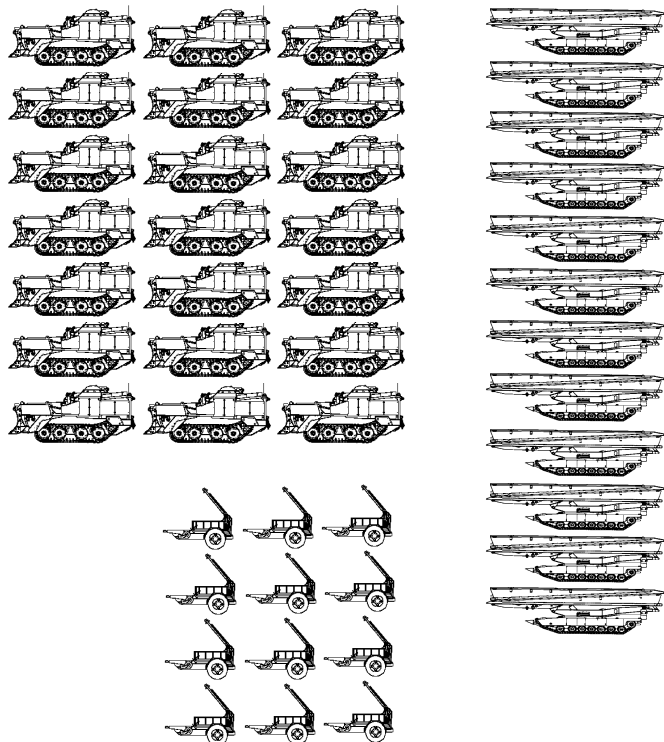


# **Significant Loss of Capability inside the Modular Army BCT**

## **Current Force**

1 Bn (3 Co's) of Sappers : 415 Soldiers

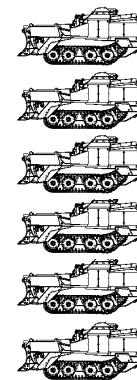
Support 9 Maneuver Companies



## **Future Force**

2 Co's of Sappers : 152 Soldiers

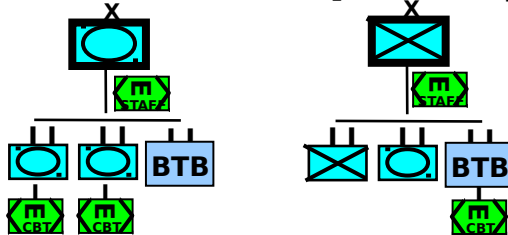
Support 11 Maneuver Companies



# Expeditionary Engineer Force Design...

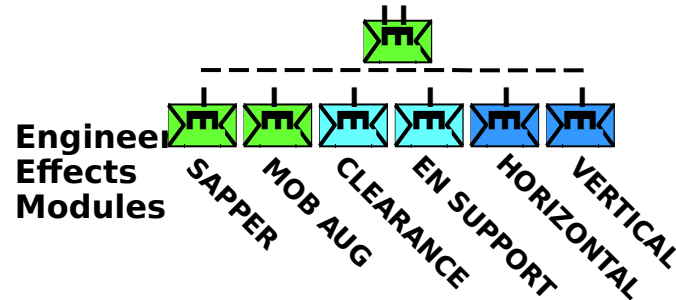
## ...Layered Capability Framework

### Embedded Capability



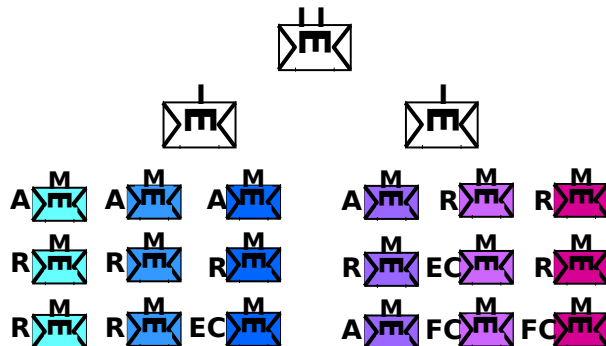
- Engineer units that are organic to a Brigade Combat Teams
- Provides minimum level of most critical / most frequently required engineer capabilities
- Must have augmentation for full spectrum operations

### Baseline Forces



- Combines engineer C<sup>2</sup> with a baseline of engineer capabilities to augment BCT shortfalls and support other UEx requirements
- Receives -- and depends upon -- modules from force pool for mission specific capabilities

### Mission Module Forces



- Primarily provides engineer effects modules required to respond to specific missions
- Organization is modular from squad to company
  - Maximum commonality of design
  - Fixed organizations with discrete sets of capabilities
  - Scalable robustness

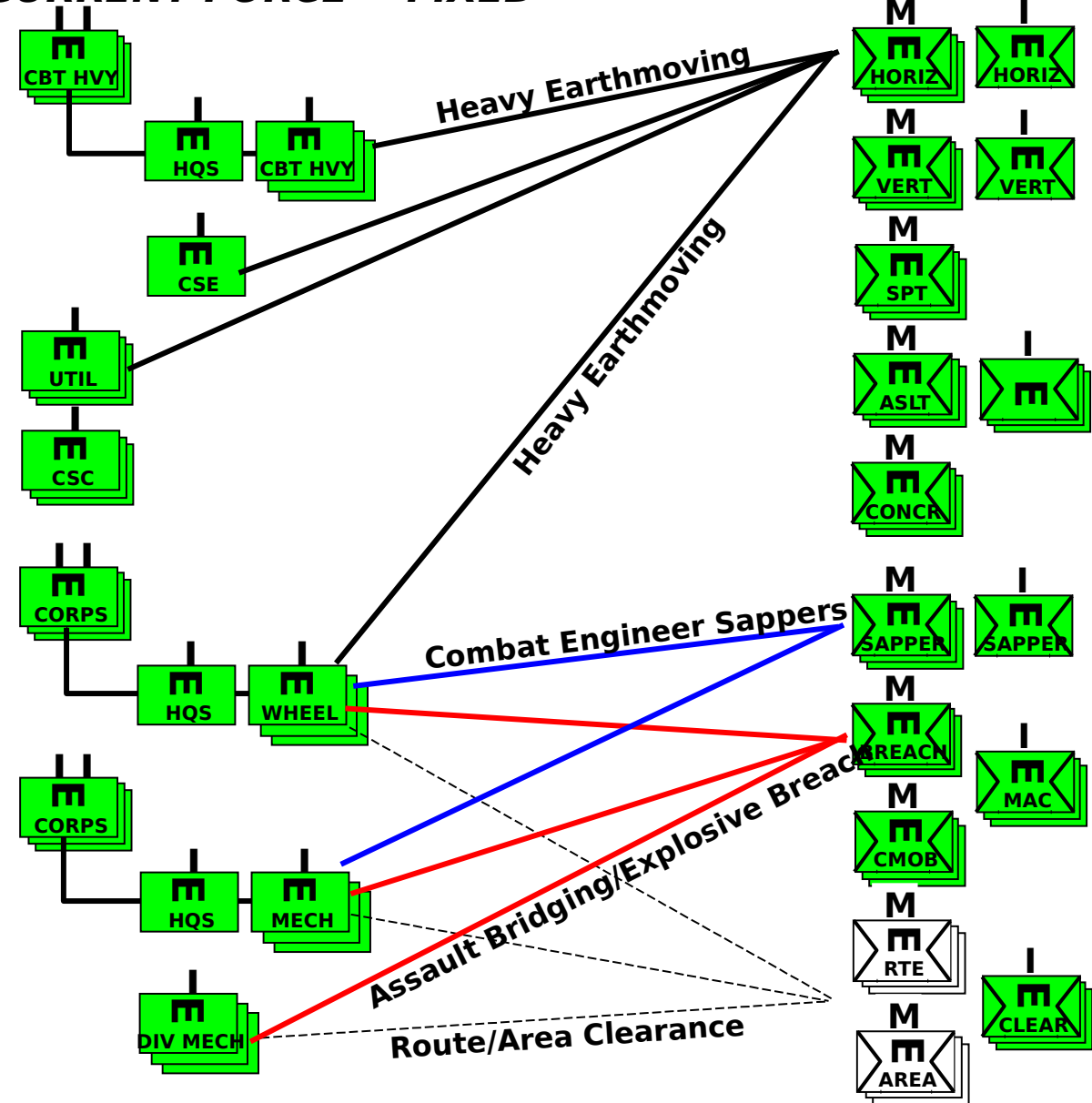
A - Active EEM  
 R - NG/USAR EEM  
 EC - Equip Contract EEM  
 FC - Full Contract EEM

**Mix of A / R / EC / FC depends on:**

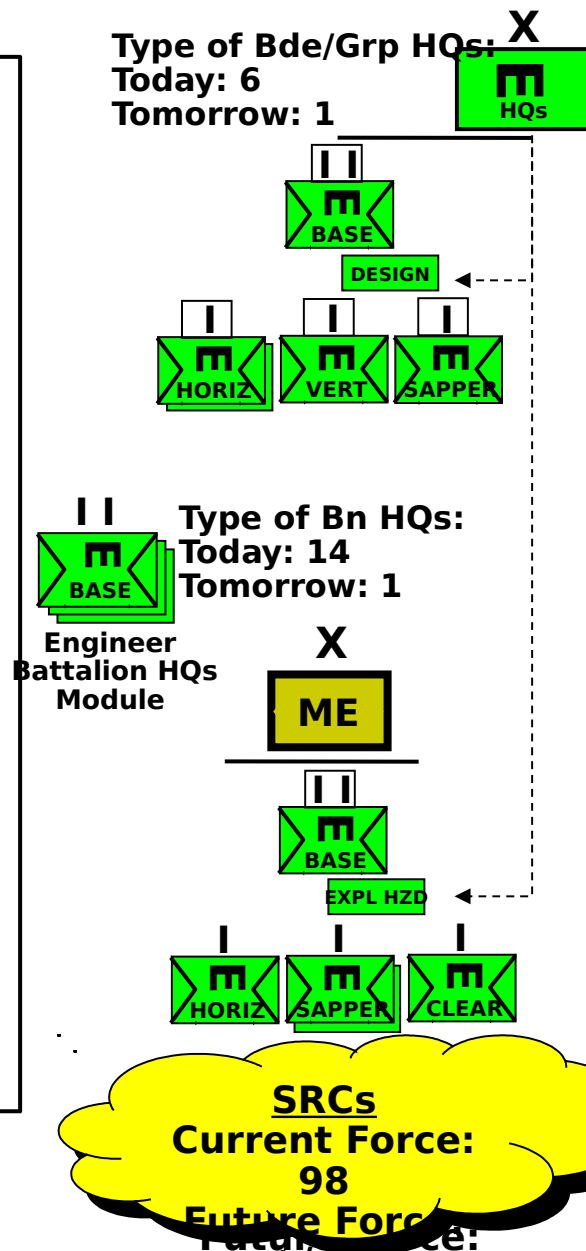
- Frequency required
- Integration required with other forces
- Where it occurs on battlefield and when
- Theater-specific conditions

# From Mission Based to Capabilities Based

## CURRENT FORCE -- FIXED



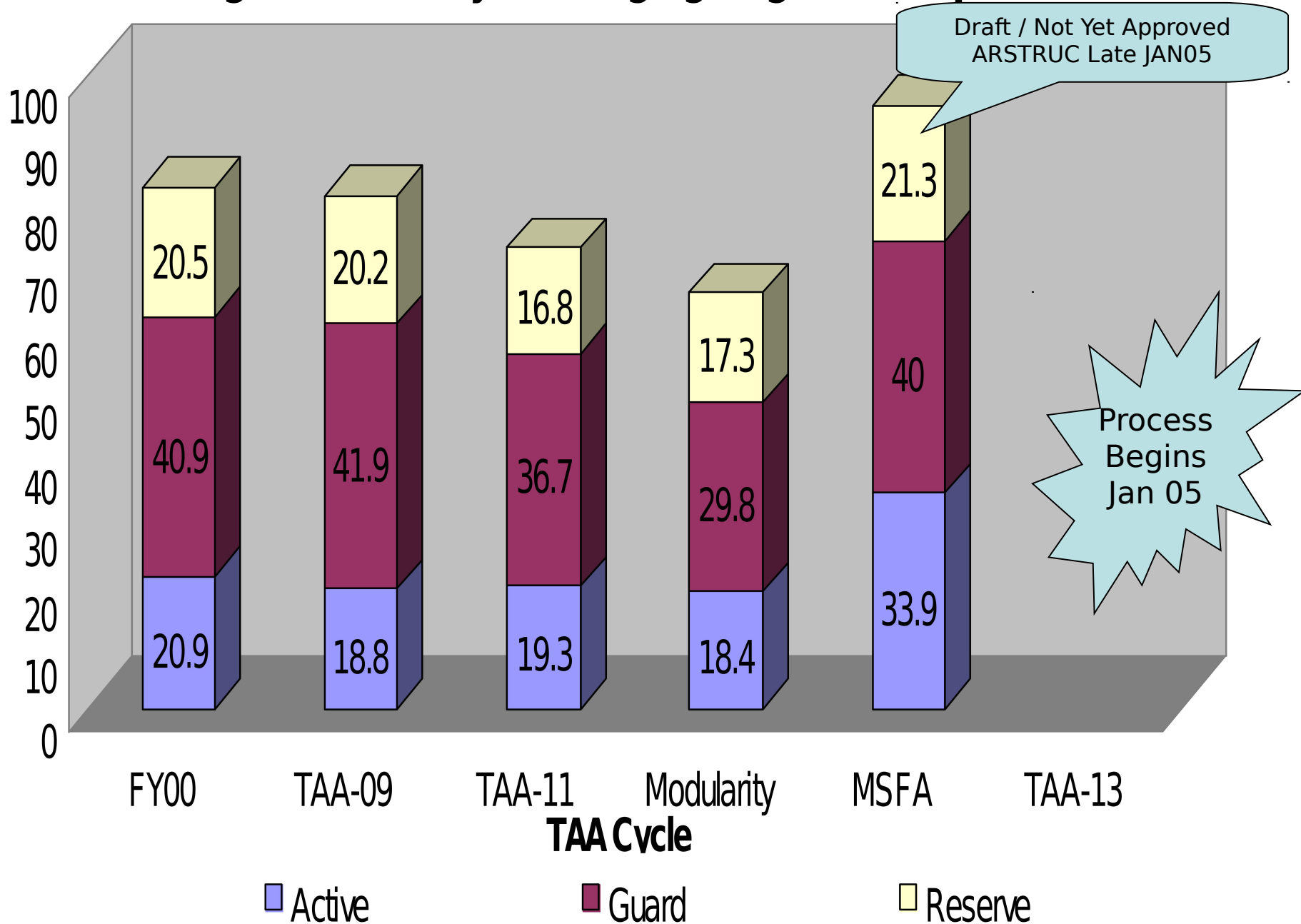
**FUTURE FORCE -- TAILORABLE**



# Overview Current vs Future Engineer Force

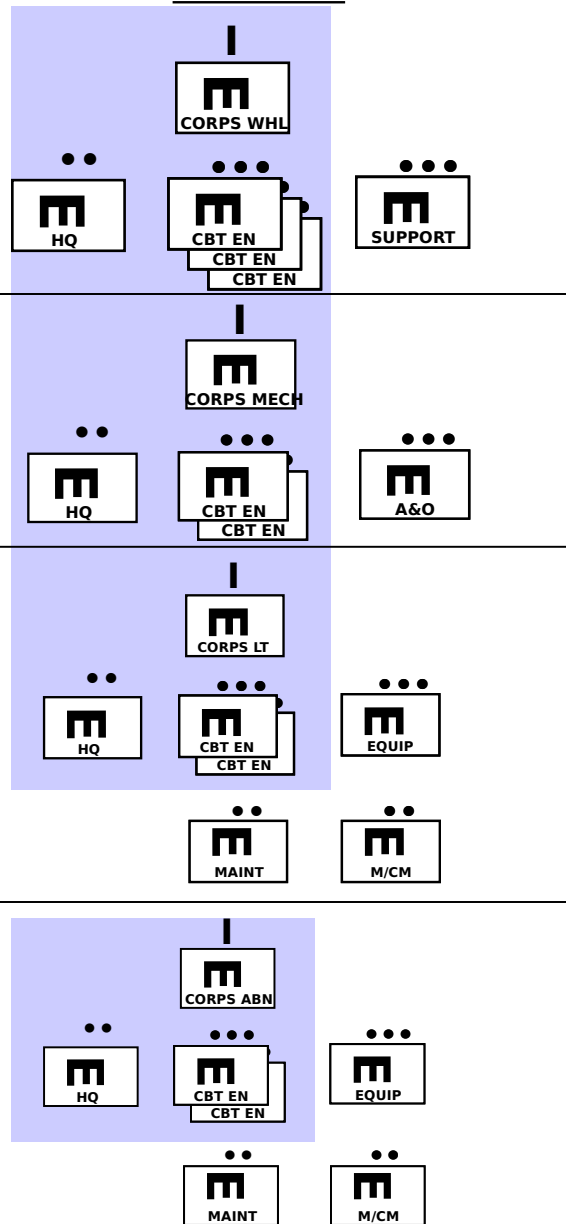
- Current Engineer Force has 98 SRCs – Future Engineer Force has 32
- 1 multi-functional Engineer Brigade HQs design versus 6 “stovepipe” Brigade / Groups in current force
- 1 multi-functional Battalion HQs design versus 9 “stovepipe” battalions in current force
- Modules and Companies are Capabilities Focused
  - Streamlines training and employment
  - Simplifies strategic planning – request discrete units with discrete capabilities
  - Captures migration of capabilities out of BCT engineer companies
  - Increases agility, strategic mobility, and focuses capabilities
  - Some growth in certain MOSs with equivalent reduction in others
- Within Current Resources, approximately:
  - 243 Companies (previously 243)
  - 60 Battalions (previously 67) + 82 BTBs
  - 10-15 Brigades (previously 21 “TAA11”)

# Meeting the the Army's Changing Engineer Requirements



# Sapper Company

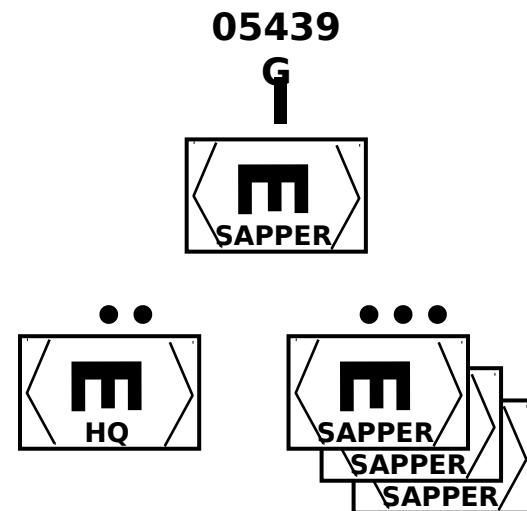
## CURRENT



## CONCEPT

- Sapper company provides mobility, countermobility, survivability tasks and provides support of general engineering missions for Maneuver and Support Bdes
- Provides Battle Command for 3-5 sapper, assault, obstacle, clearance, or tactical bridge platoons operating as an Engineer Team
- Provides 660 manhours/day for general construction labor tasks to vertical, horizontal, or BCT Engineer Support Companies
- Company supports clearance missions, Maneuver BCTs, Support Bdes, construction missions

## PROPOSED

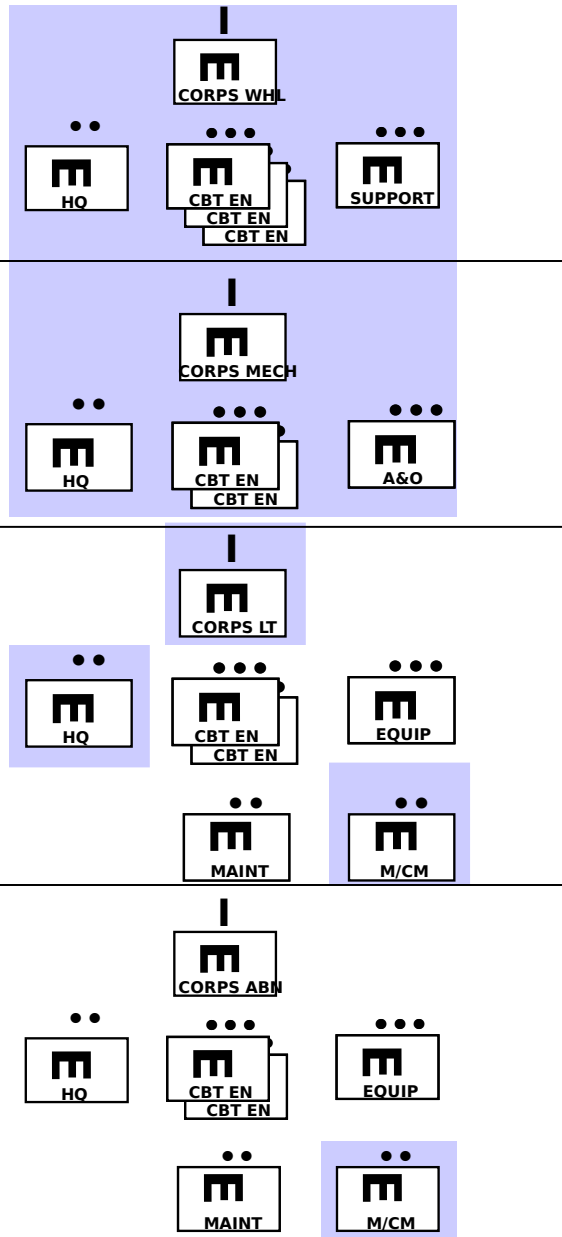


 = Capability Migrated



# Mobility Augmentation Company

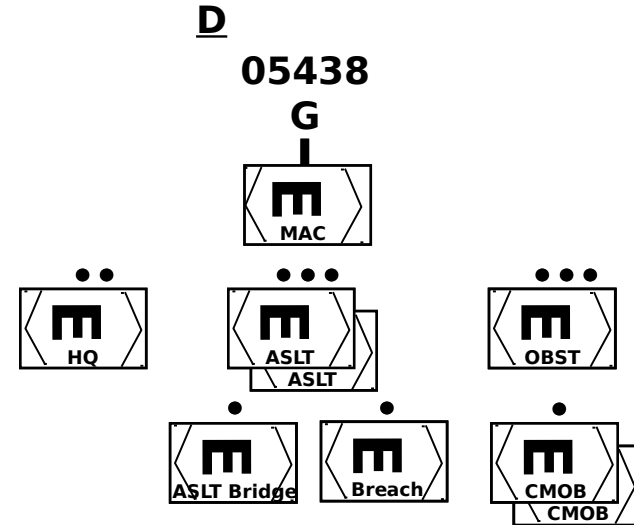
## CURRENT



## CONCEPT

- Mobility Augmentation Company conducts assault gap crossings, mounted and dismounted breaches, and emplaces obstacles in support of Maneuver and Support Bdes
- Provides Battle Command for 3-5 sapper, assault, or obstacle platoons operating as an Engineer Team
- Enables a Maneuver BCT to conduct 4 assault gap crossings; Enables an Infantry/Striker BCT to conduct 4 mounted breaches; Enables a Heavy BCT to conduct 2 mounted breaches; Enables a Maneuver BCT to conduct 4 additional dismounted breaches
- Can emplace 4432 linear meters of fix/disrupt tactical obstacle frontage without reload in support of Maneuver and Support Bdes
- Can employ 2 Breach Squads to execute hasty route clearance operations in support of Maneuver and Support Bdes
- Company supports Engineer Battalion

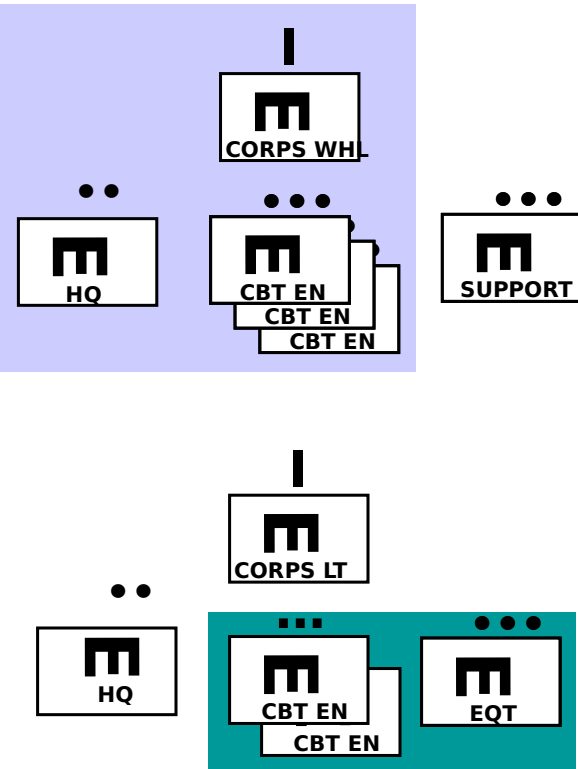
## PROPOSED



 = Capability Migrated

# Clearance Company

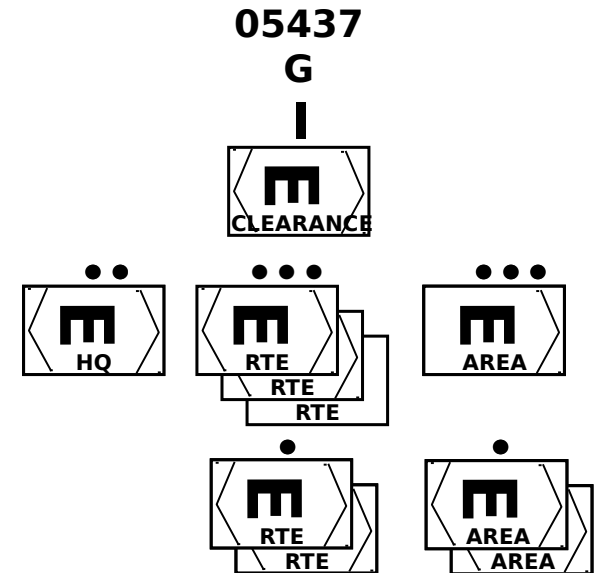
## CURRENT T



## CONCEPT

- Clearance Company conducts detection and neutralization of explosive hazards along routes and within areas in support of Support Bdes
- Provides Battle Command for 3-5 route, area, or sapper platoons operating as an Engineer Team
- Can clear a total of 255 km of two-way routes per day
- Can clear a total of 8093 m<sup>2</sup> per day
- Company supports UEx, Engineer Battalion, Support Bdes

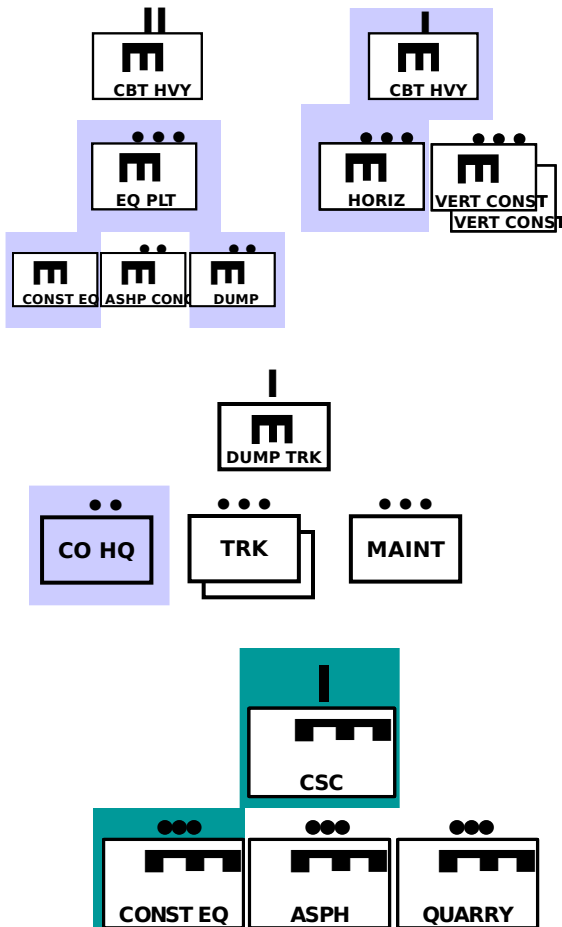
## PROPOSE D



 = Capability Migrated

# Horizontal Company

## CURRENT

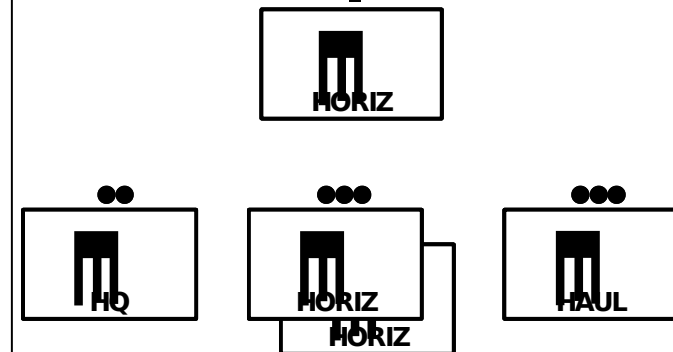


## CONCEPT

- Executes general engineering missions to repair, maintain, and/or construct air/ground LOCs; repair and restore infrastructure, and enhance force and infrastructure protection in support of Maneuver BCTs, Support Bdes, or Engineer Bdes. Supports gap crossing operations
- Provides battle command for three to five platoons as an Engineer Team
- To Engineer Battalions as part of an Engineer Brigade supporting a UEy, Engineer Command, or a Maneuver Enhancement Brigade
- May be part of a mission team that may augment a Maneuver BCT in defensive operations
- Reorganizes Combat Heavy Battalion L666

## PROPOSED

05417GO

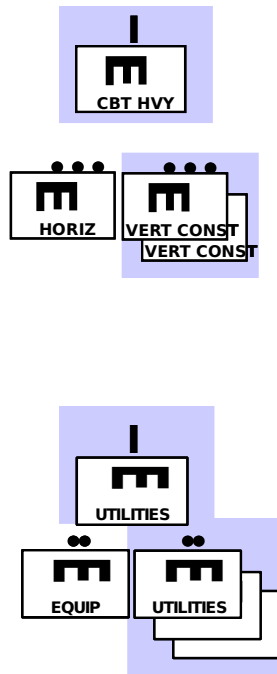


## ROA

- 1.23 per horizontal construction workload in LR 2-4 (except for maintenance of low traffic areas in LR2; damage repair of low damage roads in LR2; and damage repair of baseline 0 troop housing in LR2)
  - 1 per HBCT during defensive operations
  - .42 per HBCT
  - .33 per strategic port
- Teal square icon = Capability Migrated**

# Vertical Company

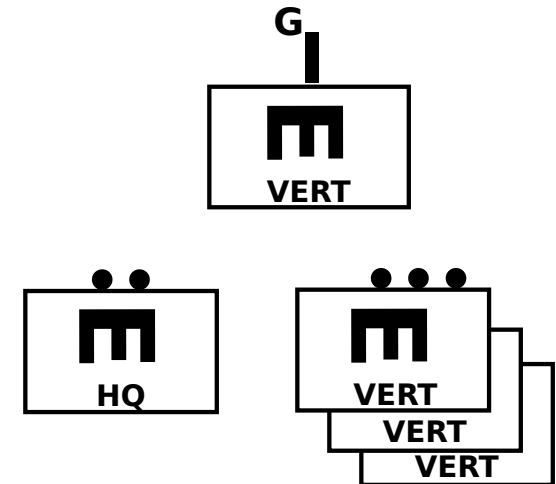
## CURRENT



## CONCEPT

- Executes general engineering missions to construct basecamps, internment facilities; construct, repair, maintain vertical infrastructures in support of Support Brigades or Engineer Brigades
- Provides battle command to three to five platoons as an Engineer Team
- To Engineer Battalions as part of an Engineer Brigade supporting a UEy, or a Maneuver Enhancement Brigade
- Maintains current level of vertical capability; combines utilities and vertical capabilities into one organization when combined with a RDE-M platoon

## PROPOSE D 05418



## ROA

- .95 per vert construction workload (1000 MH per day) in LR 1-4
- .33 per strategic port (will be offset by the port maintenance task)



= Capability Migrated

# **U.S. Army Engineer School**

## **Training Integration Office, Directorate of Training and Leader**

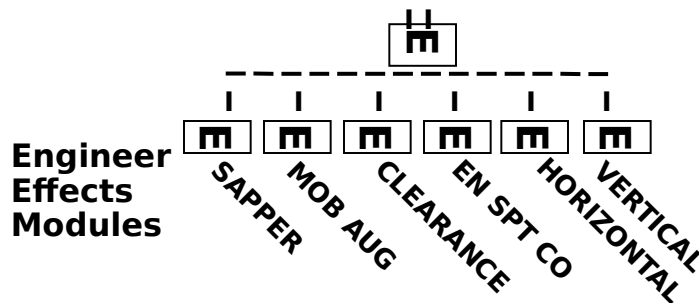
### **Development (DOTLD)**

#### **Analysis of the Future Engineer Force Training Model**

# Engineer Expeditionary Package

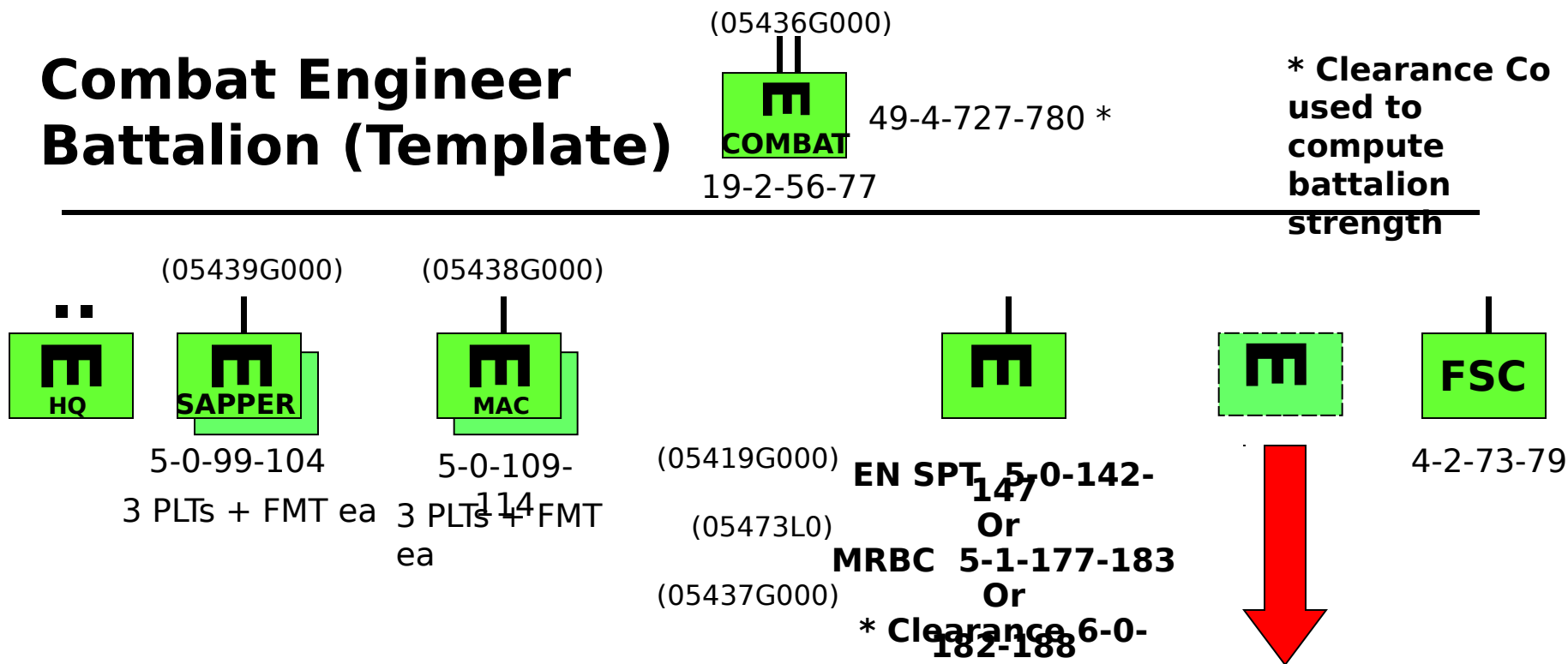
Definition: **An Engineer Expeditionary Package is a mission tailored engineer force with the agility, skills, and tools to effectively and efficiently assure the mobility of the BCT during the course of an operation.**

## Baseline Forces





# Combat Engineer Battalion (Template)



**Mission:** Provide tactical and operational-level assured mobility in a UEx AO (LRs 1-2) to enable force application and focused logistics; typically assigned to a Maneuver Enhancement Brigade and may augment embedded engineer capability in Maneuver BCTs (LR 1).

**ROA:** Provide battle command to 3-5 engineer companies in LR 1-2 in support of a UEx.

# Construction Engineer Battalion (Template)

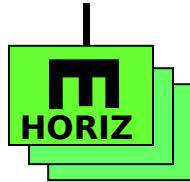
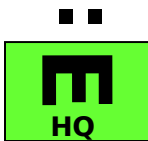
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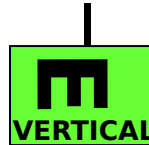
(05417G000)



5-0-169-

3 PLTs + 1 FMT ea

(05418G000)



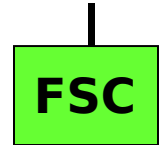
5-3-158-

3 PLTs + 1 FMT

(05402GL00)



0-1-13-14



4-2-73-79

**Mission:** Provide operational and theater level construction in a UEy AO or Joint Operational Area to enable focused logistics and enhance protection; typically assigned to a Maneuver Enhancement Brigade or Engineer Brigade.

**ROA:** Provide battle command to 3-5 engineer companies in LR 2 in support of a UEx or 3-7 engineer companies in LRs 3-4 in support of a UEy.

**Haul Plt** (05520GF00)  
(05520GB00)

**Quarry Plt** (05520GC00)  
(05530LA)

**Asphalt Tm** (05520GA00)  
05520LE)

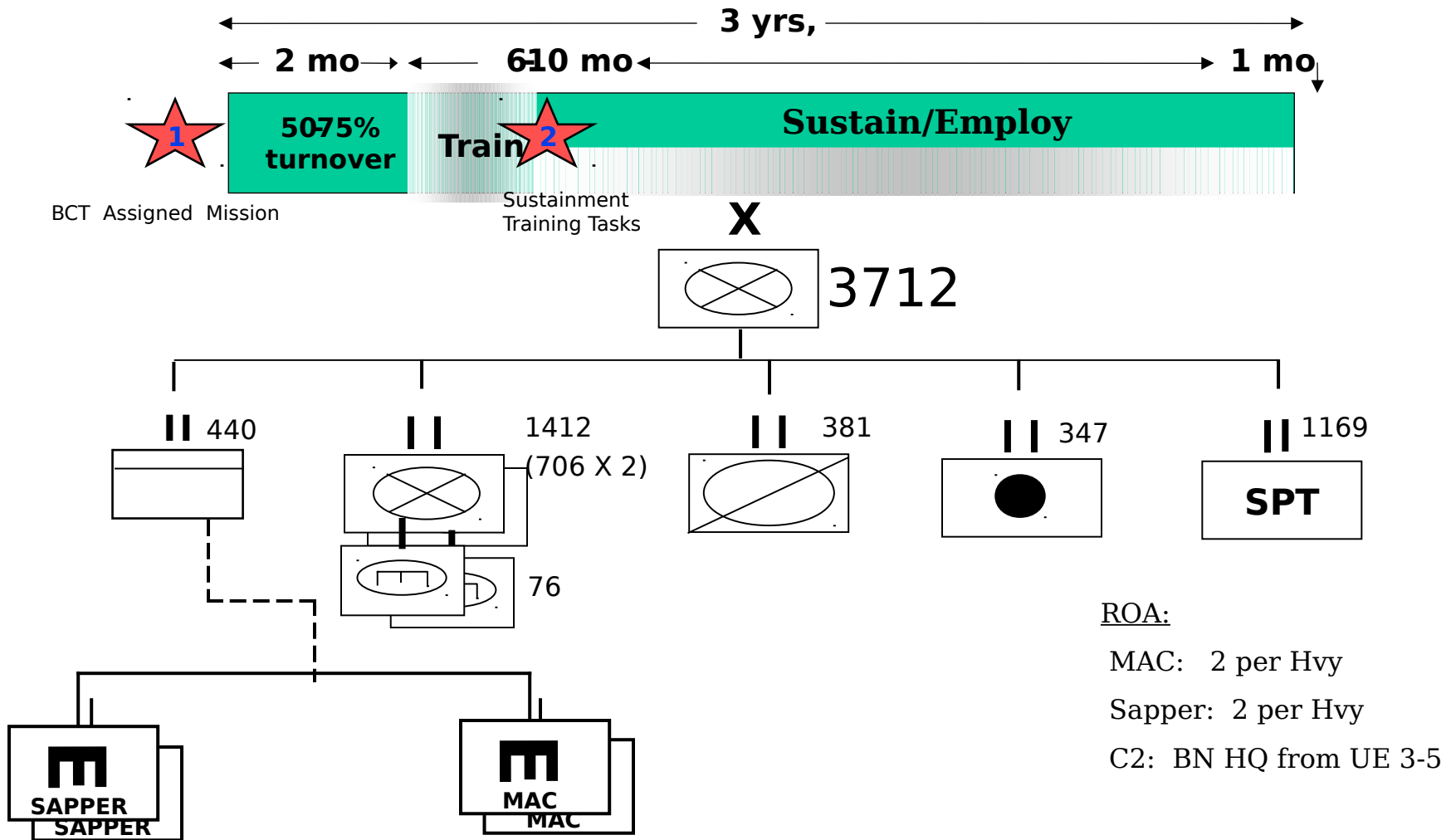
**Concrete Tm**

**Heavy Dive Tm**

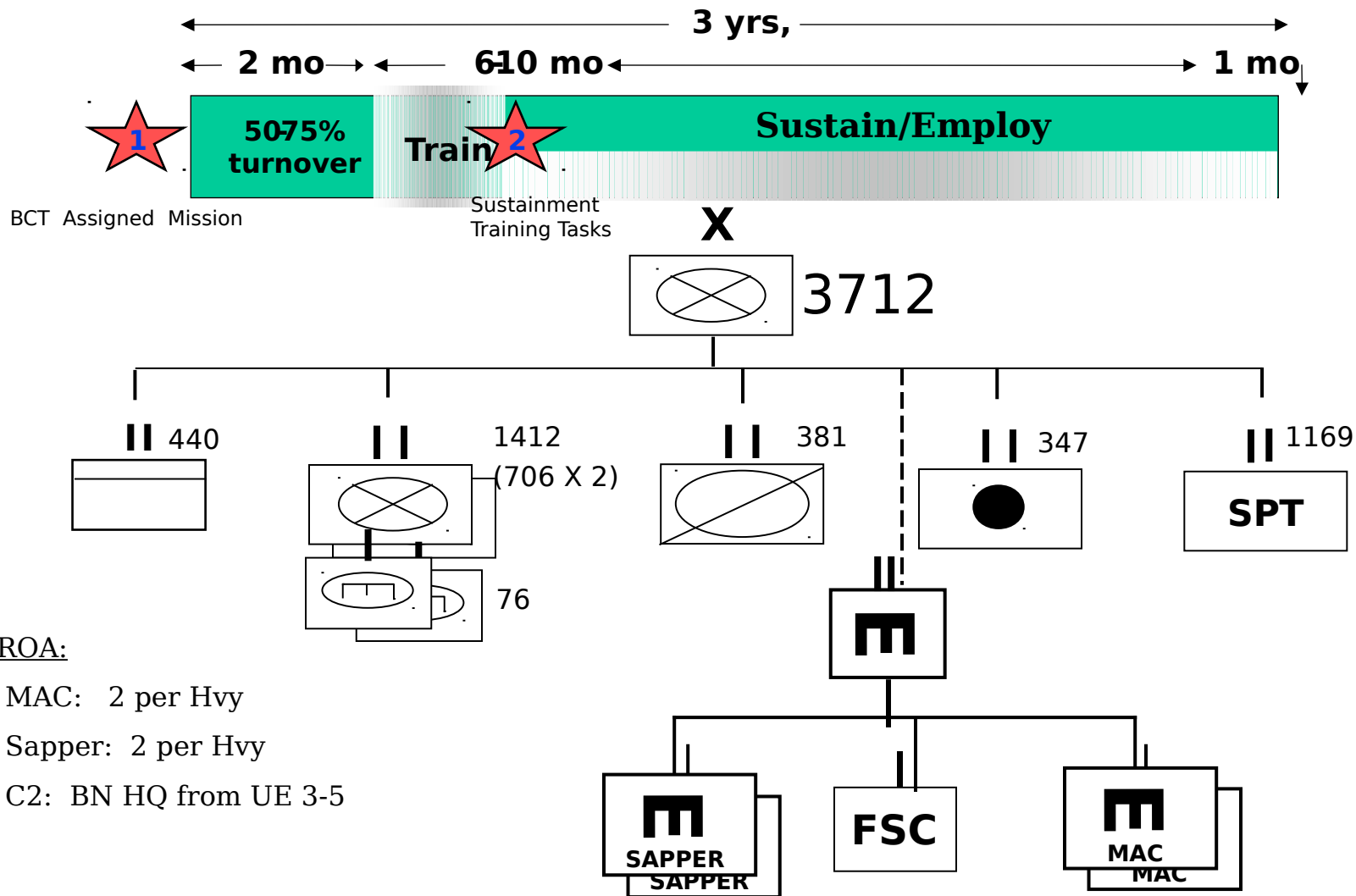
**Well Drilling Tm**

**Allocated to Construction Engineer Battalions based on future Army requirements and current stationing considerations**

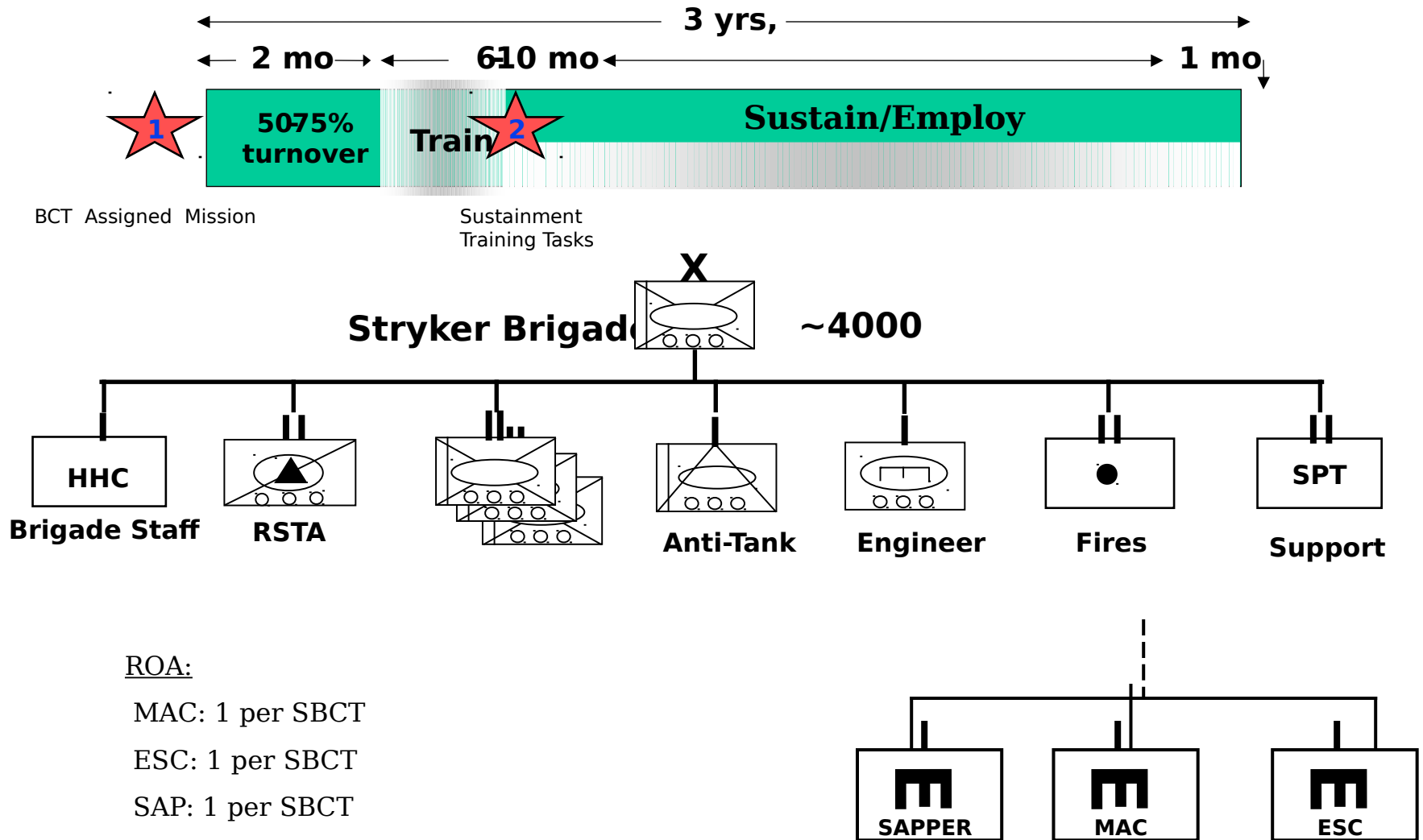
# COA 1- Heavy Brigade Combat Tm



# COA 2- Heavy Brigade Combat Tm



# COA 1- Stryker Brigade Combat Tm



ROA:

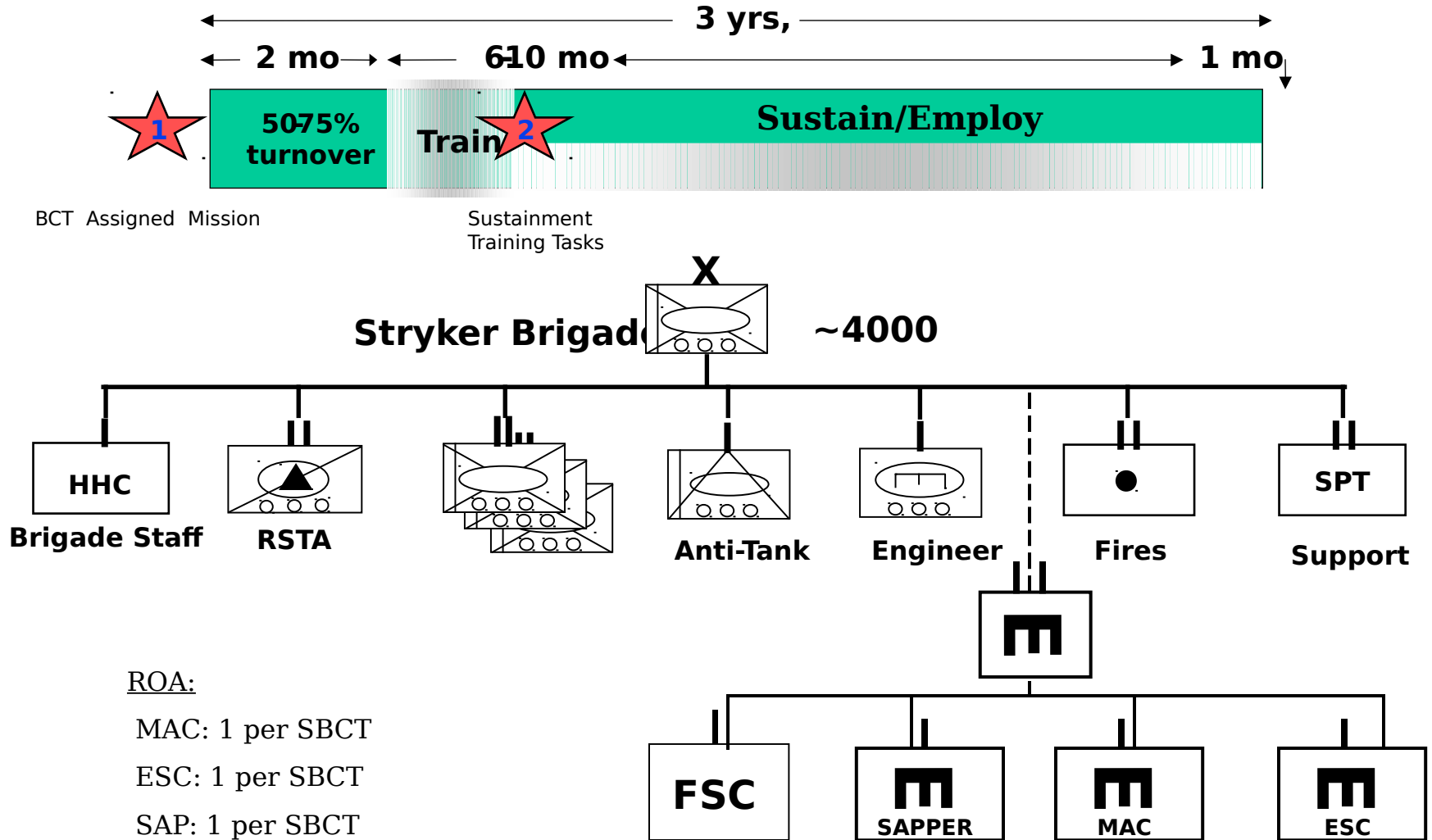
MAC: 1 per SBCT

ESC: 1 per SBCT

SAP: 1 per SBCT

C2: BN HQ from UE 3-

# COA 2- Stryker Brigade Combat Tm



ROA:

MAC: 1 per SBCT

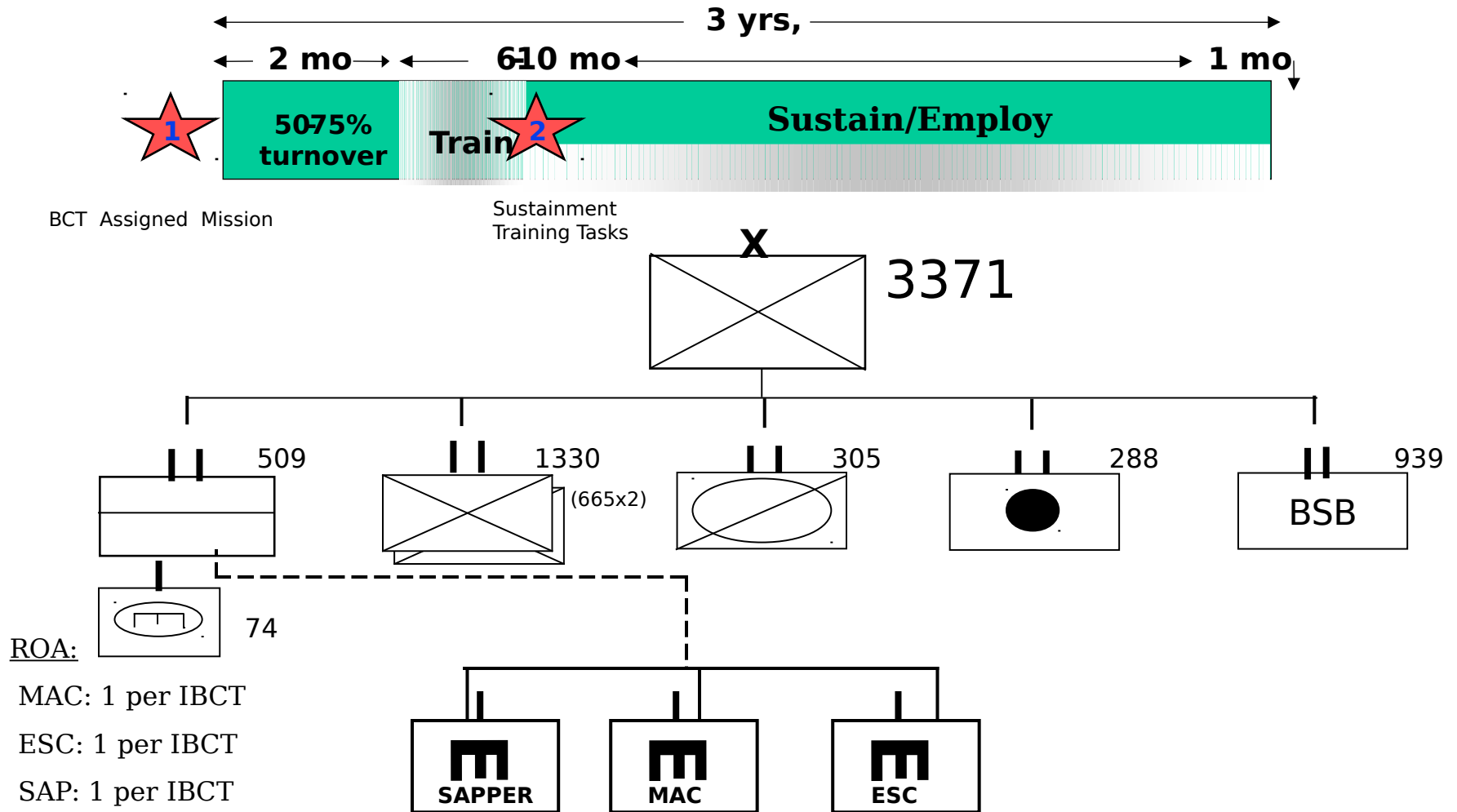
ESC: 1 per SBCT

SAP: 1 per SBCT

C2: BN HQ from UE 3-

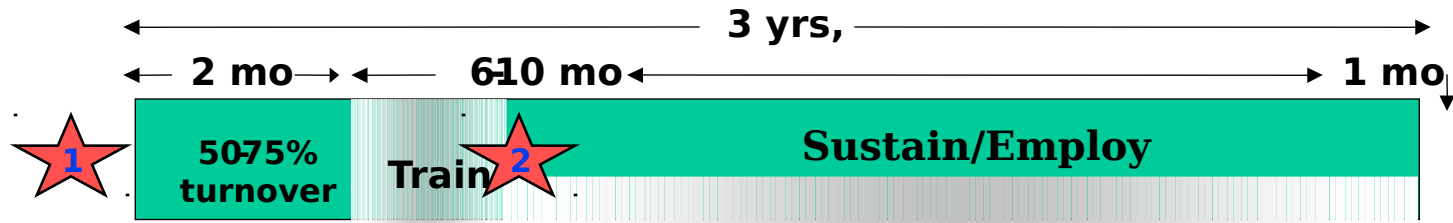


# COA 1- Infantry Brigade Combat Tm



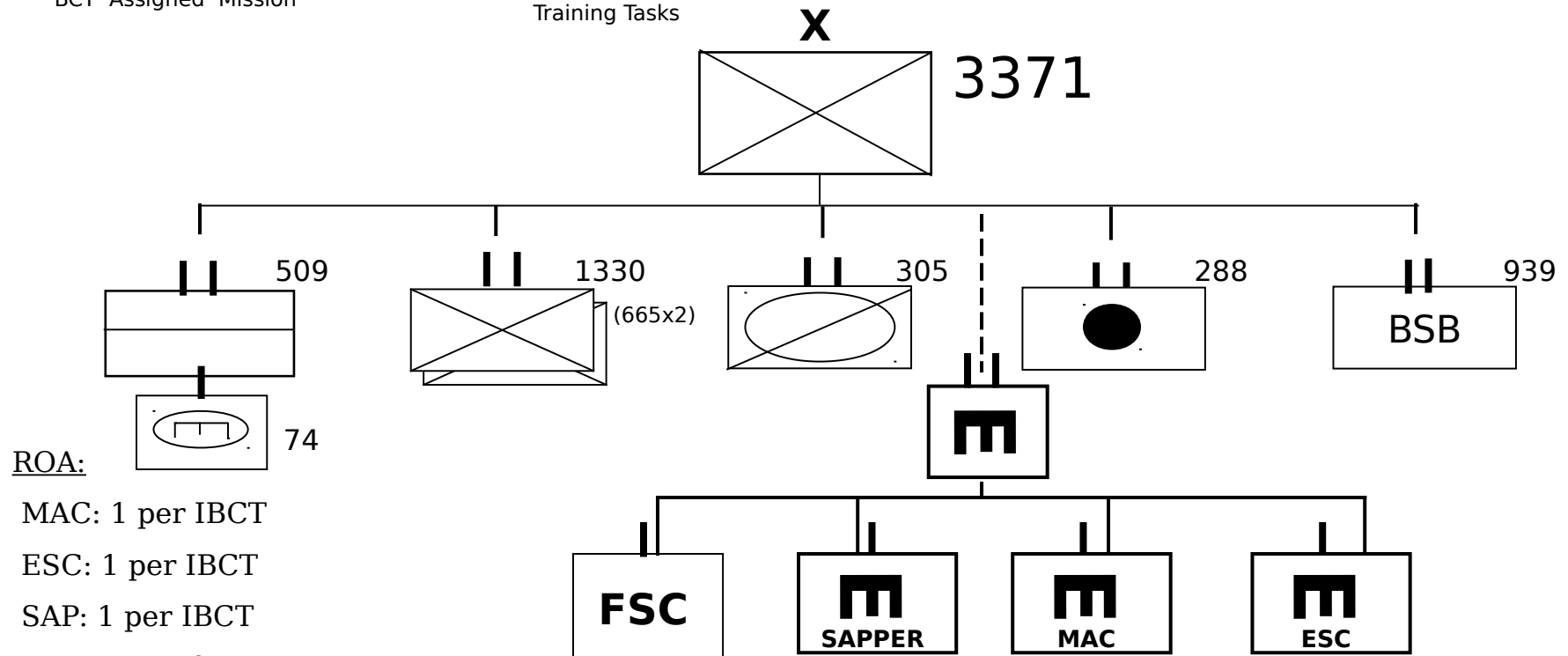
C2: BN HQ from UE 3-

# COA 2- Infantry Brigade Combat Tm

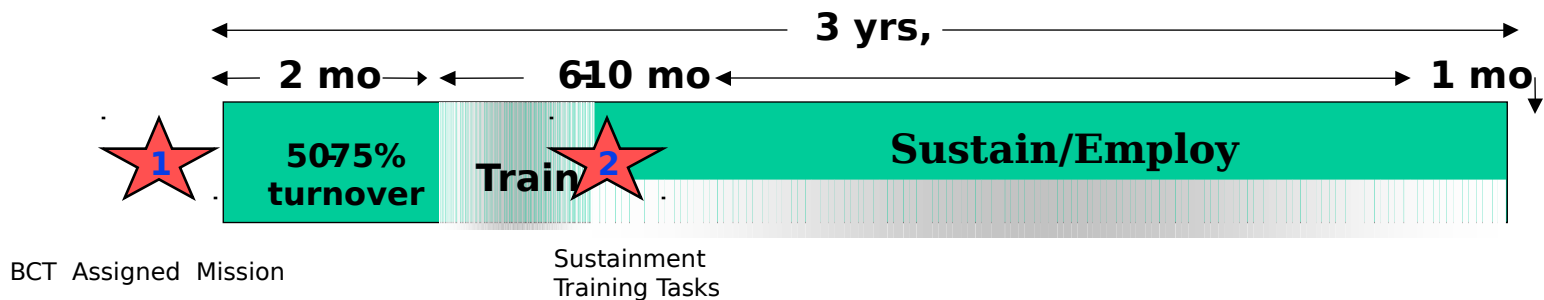


BCT Assigned Mission

Sustainment  
Training Tasks



- **ISSUE: How is the Expeditionary Package Organized and Trained with the BCT?**
- **BACKGROUND AND DISCUSSION:**
  - DCD designed based on the ROA
  - HBCT Combat oriented receives 2 x Sapper and 2 x MAC
  - SBCT/IBCT Combat oriented receives 1 x Sapper; 1 x MAC; 1 x ESC
  - DP 1 Assigning of a mission based on 1 of 4 or combination of the 4 operations (offensive; defensive; stability; support)
  - DP 2 Sustain/Employ (Resources required to maintain)



- **ISSUE: What are the minimum Engineer Essential Capabilities required to support the BCT**
- **BACKGROUND AND DISCUSSION:**
  - **Engineer Essential Capabilities List (EECL) based on the Joint Engineer Capability Element**
  - **The task list has been cross walked with the AUTL and UJTL**
  - **The engineer effects modules capabilities cover the full spectrum of the JECE through numerous combinations of the effects modules**
  - **The JECE supports the full spectrum of operations**
  - **Expeditionary package developed for the first 72hrs of combat operations**

## Joint Engineer Capability Elements

Deploy Engineer Forces

Plan and Control Engineer Forces

Detect and Neutralize Explosive Hazards

Provide Gap Crossing

Enhance Mobility In Complex and Urban Terrain

Attack Enemy Freedom of Maneuver

Generate, Distribute, and Analyze Geospatial Data

Mobility Assessments

Provide Deployable Earthmoving

Repair / Construct LOCs

Repair and Restore Infrastructure

Enable Theater Access

Enhance Force Protection

Enhance Infrastructure

## Joint Engineer Capability Elements

	Horizontal Construction	Vertical Construction	Engineer Support	Mobility Augmentation	Sapper	SUPPORT	STABILITY	DEFENSE	OFFENSE
Deploy EN Forces									
Plan & Control EN Forces									
Detect & Neutralize Explosive Hazards									
Provide Gap Crossing					X		X		
Enh MOB in Complex & Urb Terrain	X	X			X				
Attack Enemy Freedom of Maneuver			X	X	X				
Generate, Distr., & Anal Geo Data			X	X	X				
Mobility Assessments									
Provide Deployable EM			X	X	X				
Repair/Construct LOCs			X						
Repair and Restore Infrastructure	X	X	X						
Enable Theater Access	X	X							
Enhance Force Protection	X	X	X					X	
Enhance Infrastructure Protection	X	X	X		X			X	
BC & Contingency Fac Master Plan	X	X	X						

# Offensive and Defensive Capability to the BCT (1 of 4)



# Offense/Defense

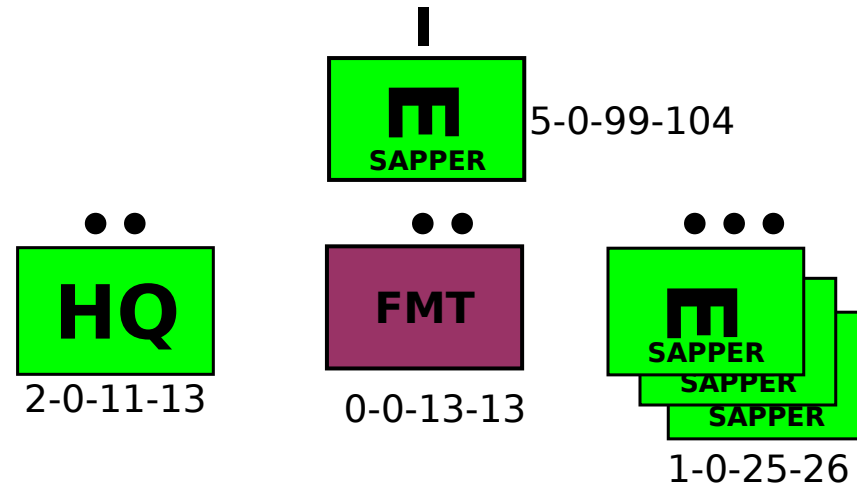
## JECE:

Detect and Neutralize Explosive Hazards  
Mobility Assessments  
Attack Enemy Freedom of Maneuver  
Enhance Mobility in Complex & Urban Terrain  
Enhance Force Protection

## ENGINEER ESSENTIAL CAPABILITIES LIST:

Plan/direct/perform EN recon.  
Report obstacle information.  
Execute hasty route clearance (level 1 and 2).  
Neutralize explosive hazards (BMD).  
Execute demolition targets.  
Conduct level 1 survivability operations.  
Prepare obstacle plan.  
Plan and control tactical and situational obstacles.  
Emplace tactical and situational obstacles.  
Construct protective obstacles.  
With augmentation:  
Conduct mounted/ dismounted/urban breach.  
Create a lane through an obstacle by manual tech.  
Create a lane through an obstacle by explosive techniques.

# Sapper



1 - 21B 03- Co Cdr  
1 - 21B 02- Co Opns Off  
1 - 21Z5 - 1SG  
1 - 21B4 2S - Opns Sgt  
1 - 21H3 - Const Foreman  
1 - 92Y3 - Sup SGT  
1 - 74D2 - NBC NCO  
1 - 25U2 - Fwd Sig Spt NCO  
1 - 21B1 - SPC Cbt Eng  
1 - 92Y1 - SPC Armorer  
1 - 21B1 - PFC Trk Veh Driver  
1 - 25U1 - PFC Sig Spt Sys Spc  
1 - 92Y1 - PFC Sup Clerk

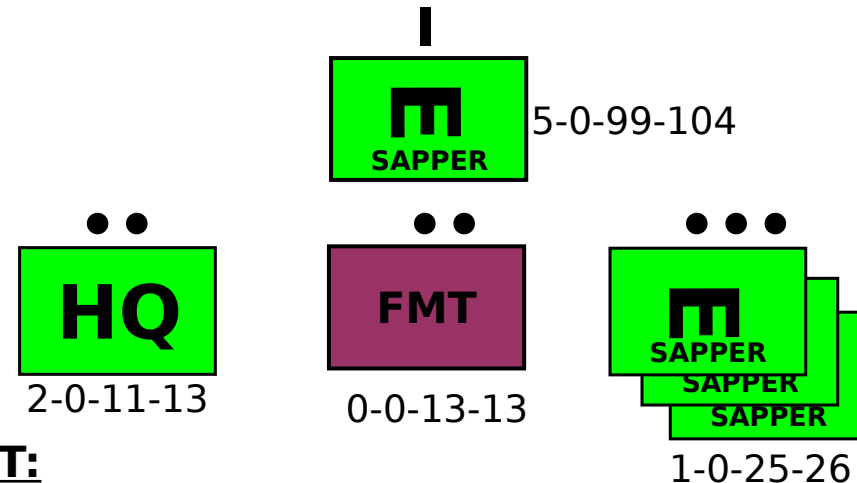
# Stability/Support Capability to the UEx (1 of 6)

# Stability/Support

## JECE:

Detect and Neutralize Explosive Hazards  
Mobility Assessments  
Enable Theater Access  
Enhance Force Protection

# Sapper



## ENGINEER ESSENTIAL CAPABILITIES LIST:

Plan/direct/perform EN recon.  
Execute hasty route clearance.  
Conduct minesweeping operations.  
Detect/mark/report explosive hazards (BMD).  
Conduct level 1 survivability operations.  
Construct protective obstacles.

### With augmentation:

Execute deliberate route clearance.  
Conduct level 2-4 survivability operations.

- 1 - 21B 03- Co Cdr
- 1 - 21B 02- Co Opns Off
- 1 - 21Z5 - 1SG
- 1 - 21B4 2S - Opns Sgt
- 1 - 21H3 - Const Foreman
- 1 - 92Y3 - Sup SGT
- 1 - 74D2 - NBC NCO
- 1 - 25U2 - Fwd Sig Spt NCO
- 1 - 21B1 - SPC Cbt Eng
- 1 - 92Y1 - SPC Armorer
- 1 - 21B1 - PFC Trk Veh Driver
- 1 - 25U1 - PFC Sig Spt Sys Spc
- 1 - 92Y1 - PFC Sup Clerk

## **Additional Army Modularity Information**

- Additional Modularity information can be downloaded from the TF Modularity FTP site:

<https://tradocfs.monroe.army.mil/tfmdocs/>

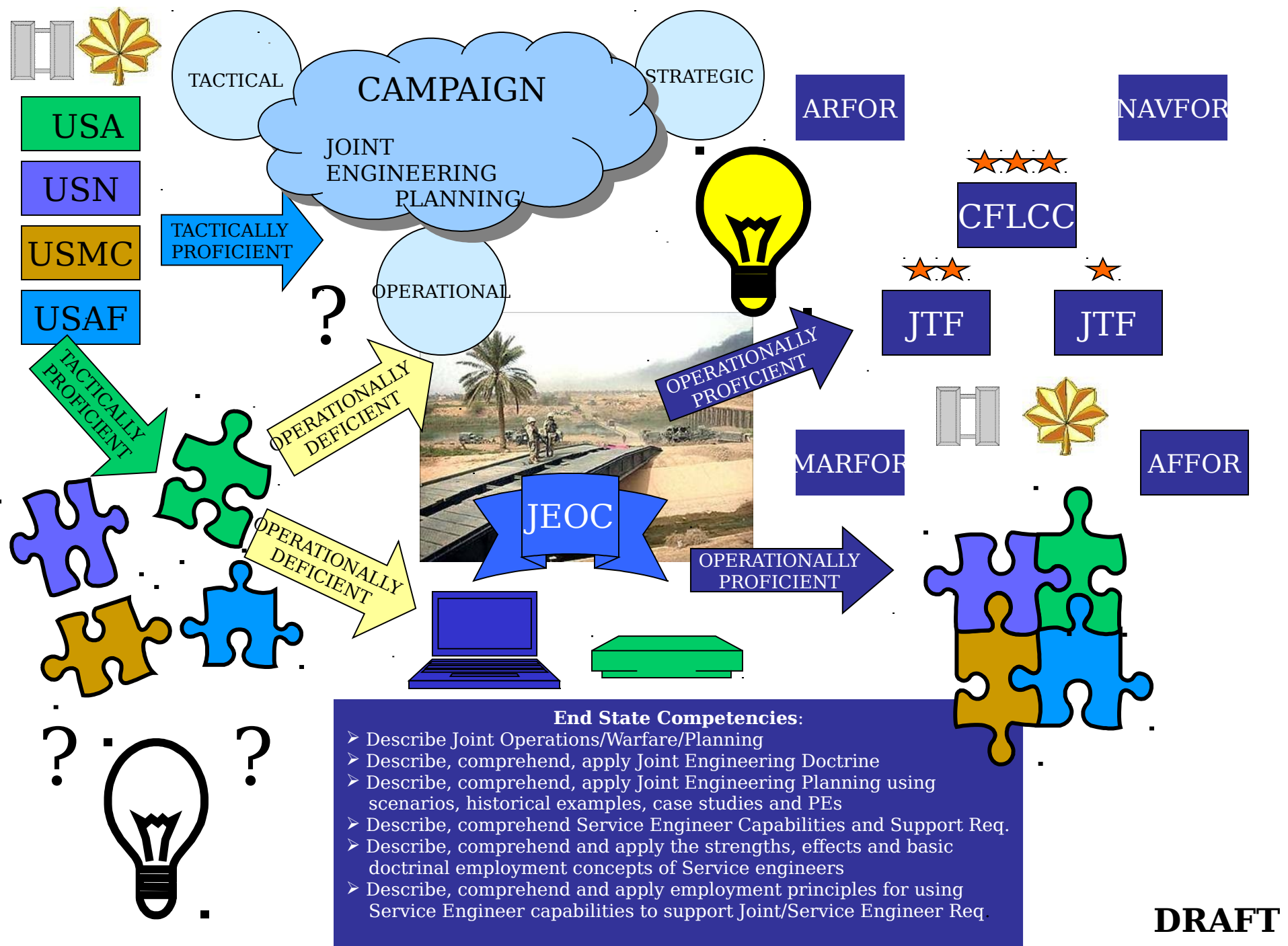
- The FTP site includes:
  - Briefings
  - Draft O&Os
  - Other Information

**Concept**

# Joint Engineer Officer Course (JEOC)

*“Bridging the Knowledge  
Gap”*





**DRAFT**

# JEOC Concept

- **Objective:**

- Understand and be able to integrate engineer capabilities across the spectrum of operations to ensure support of the Joint Force Commanders Engineer requirements and accomplishment of the Joint mission.

- **End State Competencies:**

- Describe Joint Operations, Joint Warfare and the Joint planning System.
- Describe, comprehend, apply Joint Engineer Doctrine.
- Describe, comprehend, apply Joint Engineer Planning using scenarios, Historical examples, case studies, practical exercises.
- Describe, comprehend Service Engineer Capabilities and Support Requirements.
- Describe, comprehend and apply the strengths, effects, and basic doctrinal employment concepts of Service Engineers.
- Describe, comprehend, apply employment principles for using Service Engineer capabilities to support Joint and Service Engineer requirements.

- **Target Audience:**

- Senior Company Grade and Junior Field Grade Engineer Officers of all Services

- **Length:**

- +/- 40 Hour non resident Preparatory Phase + 14 day/80 Hour - Resident Course

DRAFT

# JEOC Concept

- Preparatory Phase

- Non resident +/- 40 hours
- Intro to Joint Ops/Planning
- Intro to Joint Doctrine
- Intro to Joint Engineer Ops
- Intro to Sister Service Capabilities
- Early ID of students @ Service CGSC
- Branch Mgr involvement
- Assignment Oriented Trng
- *"Planners Tool Kit"* CD

- Resident Phase

- 10-14 Days +/- 80 hours
- Existing Eng/Joint Facility
- Classroom/SGL Instruction
- SGI/SGL w/ JTF Expertise
- VTC Suite
- Collaborative Planning
- Review non resident materials
- Guest Speaker Program
- Planning Exercises
- CAPSTONE Exercise



# DRAFT JEOC COURSE CALENDAR

## *“RESIDENT PHASE”*

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
ARRIVAL  HOUSING SECURED	INPROCESSING  <b>INTRODUCTION PHASE</b> INTRO TO JOINT OPS & WARFARE  HISTORY OF JOINT OPERATIONS  THREAT ANALYSIS - Guest Lecture JOINT CONCEPTS REVIEW  HOMELAND SECURITY BRIEF -Guest Lecture	<b>PLANNING PHASE</b> THE JOINT PLANNING SYSTEM  INTRO TO JOINT SERVICE CAPABILITIES  APPLICATION OF JOINT SERVICE ENGINEER CAPABILITIES -Guest Lecture  INTRO TO JOINT ENGINEER DOCTRINE & RESOURCES	INTRO TO PLANNING  PRACTICAL EXERCISES  APPLIED PLANNING I  PRACTICAL EXERCISES	APPLIED PLANNING II  <b>PREPARATION PHASE</b>  INTRO TO THE CAPSTONE EXERCISE  OPORD DISTRO & BATTLE PREP	Joint Task Force Command and Staff Operations - Guest Lecture  PRACTICAL EXERCISES: APPLYING PLANNING AND COORDINATION TECHNIQUES FOR JOINT ENGINEER SUPPORT TO JOINT TASK FORCE SCENARIOS  CAPSTONE EXERCISE CASE STUDIES DISTRIBUTION	NO CLASS  CASE STUDIES REVIEW AND PREPARATION
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
DAY 8	DAY 9	DAY 10	DAY 11	DAY 12	DAY 13	DAY 14
NO CLASS  CASE STUDIES REVIEW AND PREPARATION	<b>PREPARATION PHASE</b> (CRAWL)  BASIC SIMULATION EXERCISE  FIRST SMALL JOINT EXERCISE  (WALK) COE JOINT EXERCISES	<b>EXECUTION PHASE</b>  APPLYING JOINT ENGINEER CAPABILITIES INTO FULL SPECTRUM JOINT OPERATIONS  CAPSTONE EXERCISE PREPARATION	<b>CAPSTONE EXERCISE</b>  SACK LUNCH  INFORMAL AAR	<b>CAPSTONE EXERCISE</b>  SACK LUNCH  ENDEX  CLEAN-UP	<b>CONCLUSION PHASE</b>  FORMAL AAR  GRADUATION  OUT PROCESSING  STUDENT DEPARTURES	FINAL STUDENT DEPARTURES

**DRAFT**

**DRAFT**

# JEOC Concept

## **Milestones**

- **FY05**
  - Continue research into the JEOC course structure and content
  - Continue coordination efforts to align the JEOC with the JFC's requirements
  - Continue to incorporate the input and requirements from all the Services into the JEOC development process
  - Provide the JOEB with a DRAFT concept for staffing and feedback
  - Continue to refine the budget requirements for the JEOC implementation
  - Submit funding requests
- **FY06**
  - Establish the JEOC Management Cell
  - Identify the Instructional Designer and Courseware Developer
  - Complete Program of Instruction (POI) Development and Courseware Design
  - Staff the POI and courseware through JFCOM and the Services
  - Determine the method of instruction and identify the JEOC Instructors
  - Conduct Instructor Needs/Cost Analysis
  - Begin lesson planning and course setup
  - Identify the JEOC location and begin facility preparation
  - Submit funding requests
  - Execute the Pilot Program (COA 1)
- **FY07**
  - Execute the Pilot Program (COA 2)
  - Submit funding requests

# The Problem

**Issue:** Today's construct for operations in explosive hazard (EH) contaminated theaters fails to provide maneuver commanders the freedom of action to accomplish missions effectively in the current operating environment.

**Engineer Company Commander and soldiers killed clearing cluster bomb units from airfield.**

**Desert**

**Storm**

**8 Soldiers killed clearing CEA  
Afghanistan Jan 2004**

**"There is a gap between the U.S. sapper's training on breaching only (or reducing an obstacle, if practical) compared to the highly technical but administrative approach of EOD units. A meeting in the middle is required."**

**"The artificial separation between EOD and Cbt Engrs will deal with UXO whether we want them to or not - just a matter of inadequate EOD troops to the UXO task. This is a structural deficiency that it is imperative for us to fix."**

**Bde Cdr, 3<sup>rd</sup> Infantry**

**Division, Iraq**

# OIF Maneuver/ENGR Lessons Learned

- Capability gap to protect the force from explosive hazards
- OIF Initial planning focus was on WMD, not CEA/IEDs/UXOs
- Limited EOD assets initially allocated, ENGR required to conduct more explosive hazard operations
  - Allocated follow on resources late in TPFDL
- Limited capability of ENGR to deal with explosive hazards
  - Untrained engineers can not positively identify UXO without training; therefore, casualties occur during missions

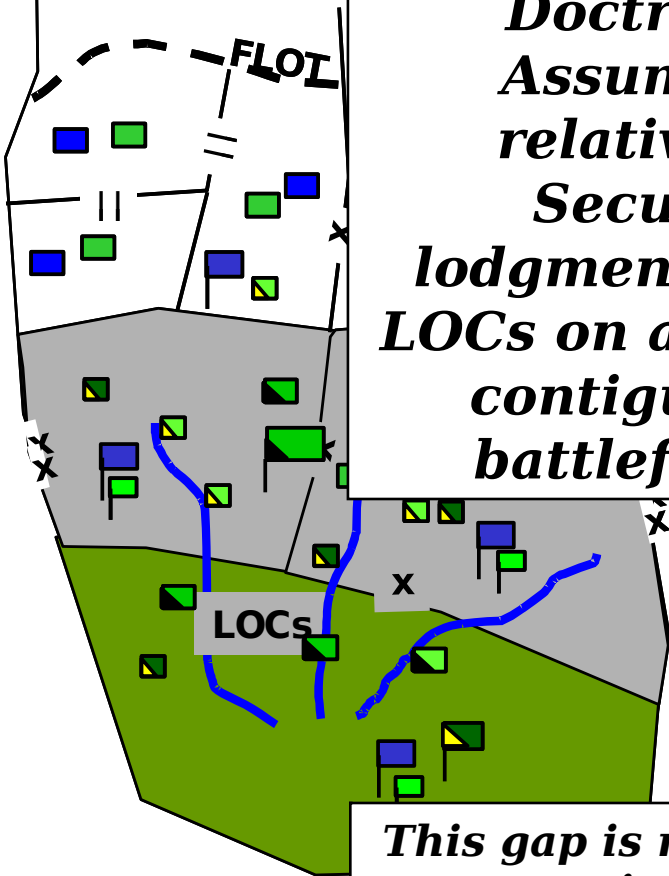
**EOD integrated with forces forward works  
- saves lives - it's how the field does it when  
they can.**

# The Gap

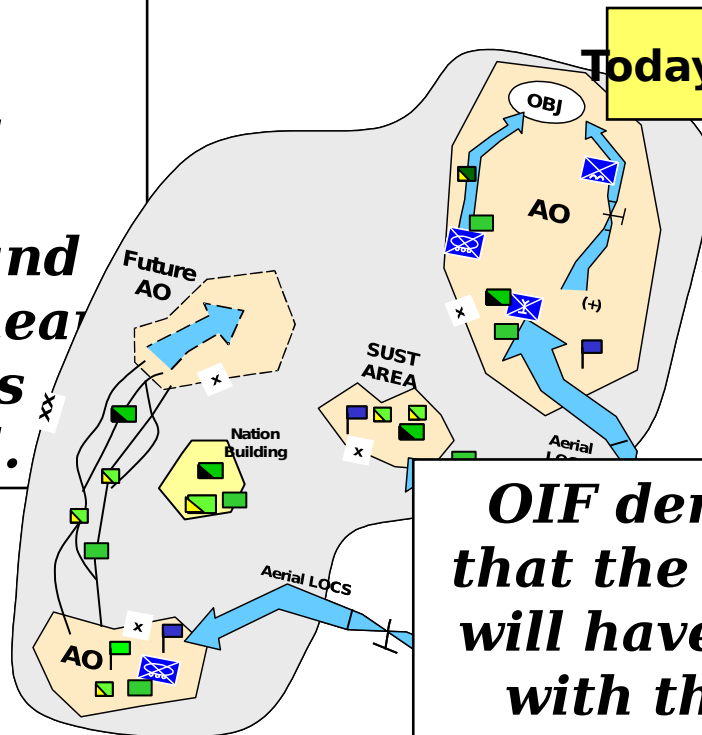
*Are we fighting the last war,  
today's war or tomorrow's war?*

**In the Past**

*The Cold War  
Doctrine  
Assumed  
relatively  
Secure  
lodgments and  
LOCs on a linear  
contiguous  
battlefield.*



**Today and Tomorrow**



*This gap is not a new challenge,  
we saw it to some degree in  
DS/DS, Somalia, Haiti, Bosnia,*

*OIF demonstrated  
that the future force  
will have to contend  
with threats on a  
non-linear, non-  
contiguous  
battlefield with  
relatively unsecure*

# INTERPRETATION OF THE GAP

UXO

Clearance Operations

Humanitarian De-mining

Search Operations

Booby Traps, IED, Explosive Hazards)

Mine/UXO Awareness Training

Sensitive Site Exploitation (SSE)

C2 / Synch / Coord

Captured Arms and Equipment (CAE)

SAPPERS

Breaching

EOD

RSP

CBRNE

IEDD





# Analogous Architecture

Combat Lifesaver   Medic   PA   Doctor   Surgeon



WARFIGHTER

R  
ID & React  
to UXO  
React to IED

EORA

Initial ID  
Evacuate  
Protect &  
Report

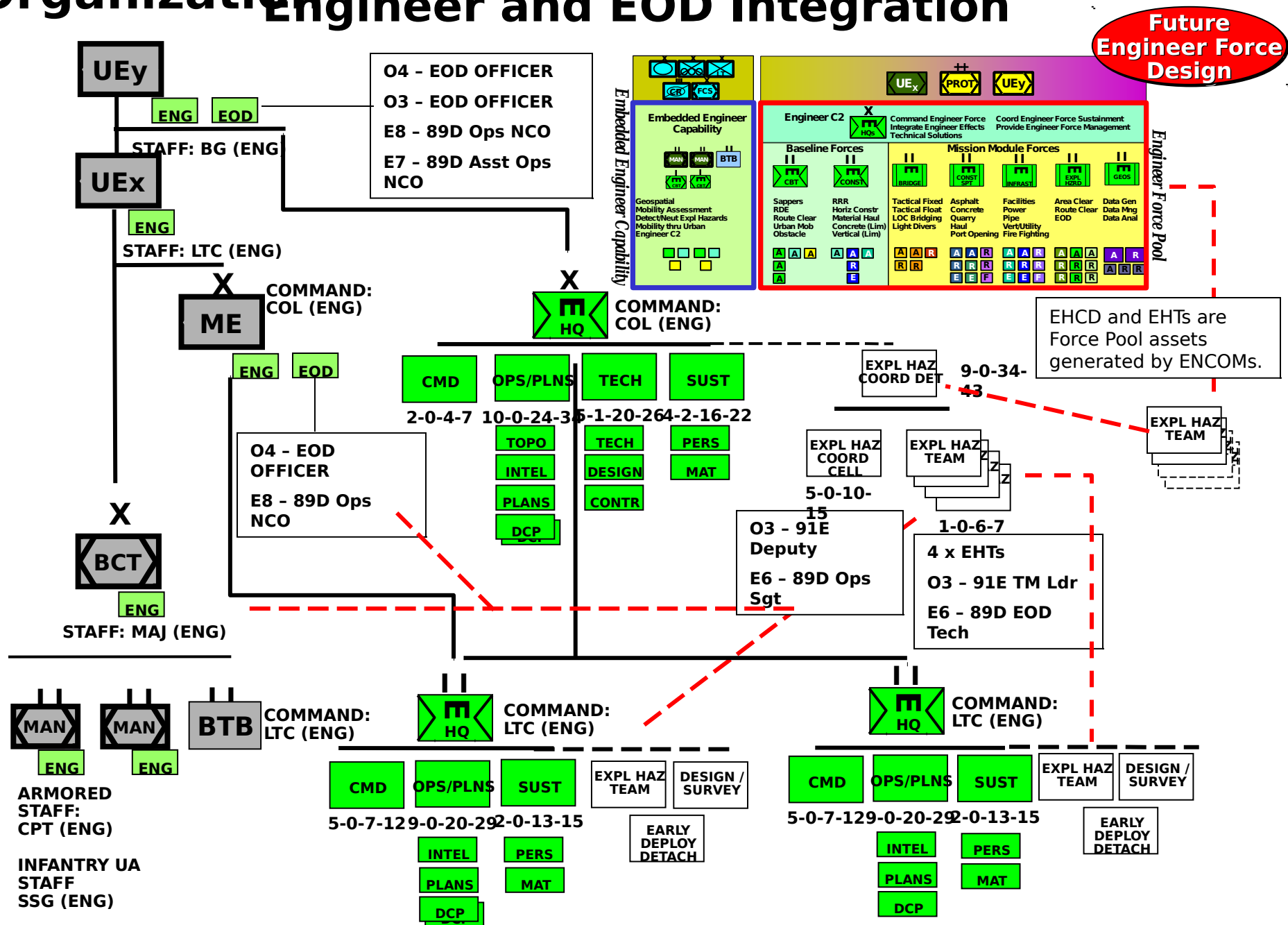
EOCA

Positive ID  
Evac and  
Prot  
Destroy  
within  
Limitations

EOD

Positive ID  
Force Prot  
Render Safe  
Pr  
CBRNE

## • Organization Engineer and EOD Integration





# Questions

